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Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

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L91 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2003 ACS  
AN 2002:818157 HCAPLUS  
TI Comparison of ELISA and GC methods to detect DDT residues in water samples  
AU Amitarani, B. E.; Pasha, Akmal; Gowda, Putte  
; Nagendraprasad, T. R.; Karanth, N. G. K.  
CS Pesticide Residue Analysis and Abatement Laboratory, Department of Food Protectants & Infestation Control, Central Food Technological Research Institute, Mysore, 570 013, India  
SO Indian Journal of Biotechnology (2002), 1(3), 292-297  
CODEN: IJBNAR; ISSN: 0972-5849  
PB National Institute of Science Communication  
DT Journal  
LA English  
CC 61 (Water)  
AB ELISA and GC methods were used to analyze DDT residues in about 30 water samples collected from different talukas of Mandya District of Karnataka. Polyclonal antibody based immunoassay developed at CFTRI, Mysore, performed well to detect the DDT residues. The min. detectable level of DDT by ELISA was one part per billion (ppb) in the water samples tested. The insecticide residue ranged from 1 to 20 ppb. Expts. also revealed no matrix effect and hence did not require any prior clean-up. The pH of the water did not interfere in the assay. The ELISA method validated in the present work is specific to DDT. The results of ELISA with respect to DDT residues were found to be comparable to values obtained from the GC anal. of the water samples. The water samples could be directly used for ELISA test, thereby making the anal. quick, simple and cost effective.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L91 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:770592 HCAPLUS

DN 136:262037

TI Application of ELISA - a quick, simple, inexpensive and sensitive assay method to analyse DDT residues in grapes

AU Amitarani; Priya, Chauhan; Pasha, Akmal; Karanth, N. G. K.

CS Pesticide Residue Analysis and Abatement Laboratory Department of FP & IC, CFTRI, Mysore, 570 013, India

SO Asian Journal of Microbiology, Biotechnology & Environmental Sciences (2001), 3(3), 167-171

CODEN: AJMBAQ; ISSN: 0972-3005

PB Global Science Publications

DT Journal

LA English

CC 17-1 (Food and Feed Chemistry)

AB Three varieties of grapes available at the local Mysore market were analyzed for DDT residues by using the ELISA technique developed for the first time at CFTRI, India. The study indicated that ELISA could detect the DDT residues in all the samples. The min. detectable level of DDT by the ELISA was 8.4 ppb and the IC50 value was 30-80 ppb. Except for matrix effect in one of the samples no clean up was required to analyze the residues in other samples. The study therefore indicates that the ELISA method can be used as an inexpensive quick method to monitor grapes for pesticide residues. The DDT residues were found to be far below the min. residue levels -3.5 ppm. (MRL, PFA 1954, 1999) and thus grapes analyzed are fit for consumption.

ST DDT detn grape ELISA

IT Food analysis

Grape

(application of ELISA, a quick, simple, inexpensive and sensitive assay method to analyze DDT residues in grapes)

IT Immunoassay

(enzyme-linked immunosorbent assay; application of ELISA, a quick, simple, inexpensive and sensitive assay method to analyze DDT residues in grapes)

IT 50-29-3, DDT, analysis

RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)

(application of ELISA, a quick, simple, inexpensive and sensitive assay method to analyze DDT residues in grapes)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

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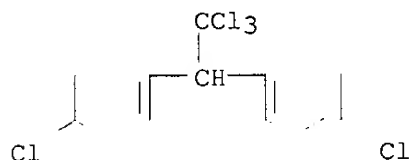
IT 50-29-3, DDT, analysis

RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)

(application of ELISA, a quick, simple, inexpensive and sensitive assay method to analyze DDT residues in grapes)

RN 50-29-3 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



L91 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2003 ACS

AN 2000:765059 HCAPLUS

DN 134:81834

TI An enzyme immunoassay for the organochlorine insecticide hexachlorocyclohexane (HCH), through conversion to trichlorophenols

AU Beasley, H. L.; Pasha, A.; Guihot, S. L.; Skerritt, J. H.

CS CSIRO Plant Industry, North Ryde, 1670, Australia

SO Food and Agricultural Immunology (2000), 12(3), 203-215

CODEN: FAIMEZ; ISSN: 0954-0105

PB Carfax Publishing

DT Journal

LA English

CC 4-1 (Toxicology)

AB A method for immunoassay anal. of the organochlorine insecticide, hexachlorocyclohexane (HCH) has been developed, based upon alk. conversion in stds. and samples to trichlorobenzenes. The trichlorobenzenes were detected through antisera developed to **haptens** contg. either a trichlorobenzene or trichloropyridine moiety, developed using the herbicides, 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) and triclopyr, resp. An enzyme conjugate based on 2,4,5-trichlorophenol provided most sensitive and specific detection. Although the assays cross-reacted with the herbicides, they did not suffer from the major disadvantage of extremely strong cross-reaction with cyclodiene organochlorines reported for a com. HCH assay. The most sensitive assay had a lower detection limit of 20 .mu.g l-1 in drinking water and was applied to water and soil matrixes.

ST enzyme immunoassay organochlorine insecticide chlorocyclohexane

IT Drinking waters

Soil analysis

(enzyme immunoassay for organochlorine insecticide hexachlorocyclohexane, through conversion to trichlorophenols)

IT Immunoassay

(enzyme; enzyme immunoassay for organochlorine insecticide hexachlorocyclohexane, through conversion to trichlorophenols)

IT Insecticides

(organochlorine; enzyme immunoassay for organochlorine insecticide hexachlorocyclohexane, through conversion to trichlorophenols)

IT 608-73-1D, BHC, stereoisomers

RL: ANT (Analyte); ANST (Analytical study)

(BHC; enzyme immunoassay for organochlorine insecticide hexachlorocyclohexane, through conversion to trichlorophenols)

IT 58-89-9, Lindane 93-76-5, 2,4,5-Trichlorophenoxyacetic acid

95-95-4, 2,4,5-Trichlorophenol 108-70-3, 1,3,5-Trichlorobenzene

120-82-1, 1,2,4-Trichlorobenzene 7732-18-5, Water, analysis

55335-06-3, Triclopyr

RL: ANT (Analyte); ANST (Analytical study)  
(enzyme immunoassay for organochlorine insecticide  
hexachlorocyclohexane, through conversion to trichlorophenols)

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HCAPLUS
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- IT 93-76-5, 2,4,5-Trichlorophenoxyacetic acid 108-70-3,  
1,3,5-Trichlorobenzene 120-82-1, 1,2,4-Trichlorobenzene  
RL: ANT (Analyte); ANST (Analytical study)  
(enzyme immunoassay for organochlorine insecticide  
hexachlorocyclohexane, through conversion to trichlorophenols)
- RN 93-76-5 HCAPLUS
- CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

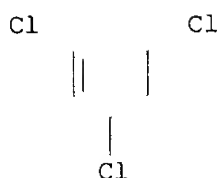
C1 O-CH<sub>2</sub>-CO<sub>2</sub>H



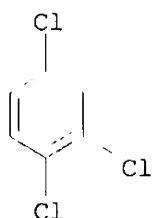
C1 C1

RN 108-70-3 HCAPLUS

CN Benzene, 1,3,5-trichloro- (8CI, 9CI) (CA INDEX NAME)



RN 120-82-1 HCAPLUS  
CN Benzene, 1,2,4-trichloro- (8CI, 9CI) (CA INDEX NAME)

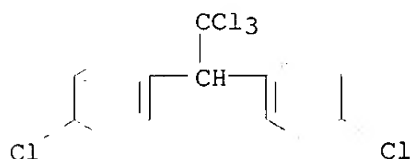


L91 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2003 ACS  
AN 1996:578559 HCAPLUS  
DN 125:214565  
TI **Hapten** synthesis and production of rabbit antibodies with reactivity to **DDT** and its metabolites for the development of an immunoassay  
AU Banerjee, B. D.; Pasha, S. T.; Koner, B. C.  
CS University College Medical Sciences and G.T.B. Hospital, University Delhi, Delhi, 110095, India  
SO Medical Science Research (1996), 24(8), 553-555  
CODEN: MSCREJ; ISSN: 0269-8951  
PB Chapman & Hall  
DT Journal  
LA English  
CC 4-4 (Toxicology)  
AB Diamino derivs. of 1,1,1-trichloro-2,2-bis(p-chlorophenyl) ethane (**DDT**) and its metabolites 1,1,1-trichloro-2,2-bis(p-chlorophenyl) ethene (**DDE**), and 2,2-bis(p-chlorophenyl) acetic acid (**DDA**) were synthesized for use as **haptens** in the development of an immunoassay. The **haptens** were conjugated to protein mols. by the diazo reaction and used to produce rabbit antibodies. Immunoelectrophoresis and enzyme-linked immunoadsorbent assay (ELISA) demonstrated the presence of anti-**hapten** antibodies. The specificity of these antibodies to **DDT** and its metabolites was established by inhibition ELISA. The min. concns. required for 50% inhibition were as follows: op'-**DDT**, 180 ng mL<sup>-1</sup>; pp'-**DDT**, 120 ng mL<sup>-1</sup>; pp'-**DDD** > 1,000 ng mL<sup>-1</sup>; pp'-**DDE**, 218 ng mL<sup>-1</sup> and pp'-**DDA**, 360 ng mL<sup>-1</sup> using antibodies to the nearest analog of **haptens**. The differential cross reactivity with analogs indicates that the epitope presumably include alkyl group besides the Ph portion of the mol. The competitive inhibition ELISA can be used for a multiresidue anal. of **DDT** and its metabolites.  
ST **hapten** antibody **DDT** metabolite immunoassay  
IT Immunoassay  
(enzyme-linked immunosorbent assay, prepn. and redn.)  
IT 50-29-3, biological studies 72-55-9, biological studies  
83-05-6 789-02-6  
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological

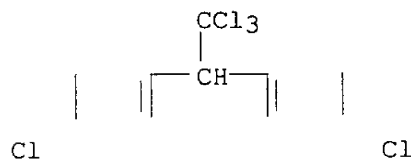
study); RACT (Reactant or reagent)

(hapten synthesis and prodn. of rabbit antibodies with reactivity to DDT and metabolites for development of immunoassay)

- IT 50-29-3DP, diamino derivs. 72-55-9DP, diamino derivs.  
83-05-6DP, diamino derivs. 789-02-6DP, diamino derivs.  
RL: BUU (Biological use, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(prepn. and redn.)
- IT 50-29-3DP, dinitro derivs. 72-55-9DP, dinitro derivs.  
83-05-6DP, dinitro derivs. 789-02-6DP, dinitro derivs.  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and redn.)
- IT 50-29-3, biological studies  
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)  
(hapten synthesis and prodn. of rabbit antibodies with reactivity to DDT and metabolites for development of immunoassay)
- RN 50-29-3 HCAPLUS
- CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



- IT 50-29-3DP, diamino derivs.  
RL: BUU (Biological use, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(prepn. and redn.)
- RN 50-29-3 HCAPLUS
- CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and redn.)

- L91 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2003 ACS
- AN 1996:202154 HCAPLUS
- DN 124:258833
- TI Detection and removal of sample matrix effects in agrochemical immunoassays
- AU Skerriitt, John H.; Rani, B. E. Amita
- CS CSIRO, Div. Plant Ind., Canberra, 2601, Australia





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L92 ANSWER 1 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
AN 2002:897357 HCAPLUS  
TI **Hapten** synthesis and influence of coating ligands on enzyme-linked immunoreaction of **DDT**  
AU Hong, Ji Youn; Kim, Jong-Hyun; Choi, Myung Ja  
CS Bioanalysis & Biotransformation Research Center, Korea Institute of Science and Technology, Seoul, 136-791, S. Korea  
SO Bulletin of the Korean Chemical Society (2002), 23(10), 1413-1419  
CODEN: BKCSDE; ISSN: 0253-2964  
PB Korean Chemical Society  
DT Journal  
LA English  
AB For the development of immunodetection method of 4,4'-dichlorodiphenyl-2,2,2-trichloroethane (p,p'-DDT), a persistent and broad toxic organochlorine insecticide, various **DDT** derivs. were synthesized and characterized for the use of immunogens and the coating ligands for the antibody evaluation. The appropriate lengths of linkers were introduced to investigate more efficient **DDT** derivs. Among these **hapten** derivs., 2,2-Bis(4-chlorophenyl)acetic acid (DDA), 5,5-Bis(4-chlorophenyl)-5-hydroxypentanoic acid (DDHP) and 5,5-Bis(4-chlorophenyl)-5-chloropentanoic acid (DDCP) were conjugated with keyhole limpet hemocyanin (KLH) for the use of immunogen to produce antibodies. 6,6-Bis(4-chlorophenyl)-6-hydroxyhexanoic acid (DDHH) and 3-[6,6-Bis(4-chlorophenyl)-6-hydroxyhexanoylamino]propanoic acid (DDHHAP) in addn. to above **hapten** derivs. were conjugated to ovalbumin (OVA) and bovine serum albumin (BSA) for the use of coating ligands to measure the titrn. level of antibody and the displacement of free analytes. Three matching pairs of antibodies and coating ligands were selected for the simultaneous detection of p,p'-DDT and its related compds. of DDA and 2,2-bis(4-chlorophenyl)-1,1-dichloroethylene (p,p'-DDE) by investigating the displacement of free analytes in an indirect ELISA. These were PAb #1 and coating ligand DDCP-OVA, PAb #1 and DDHHAP-OVA, and PAb #3 and DDHHAP-OVA. The most useful immunoreaction for **DDT** analytes were obtained using PAb #3 and coating ligand DDHHAP-OVA showing 3.4 ng/mL of lower limit of detection. These results indicated that titrn. level and free analytes displacement were greatly influenced by **hapten** derivatized and carrier proteins conjugated.

## RETABLE

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L92 ANSWER 2 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:365353 HCAPLUS

DN 137:58925

TI New approach to immunochemical determinations for triclopyr and 3,5,6-trichloro-2-pyridinol by using a bifunctional **hapten**, and evaluation of polyclonal antiserum

AU Watanabe, Eiki; Hoshino, Ryoko; Kanzaki, Yukiko; Tokumoto, Hiroshi; Kubo, Hiroaki; Nakazawa, Hiroyuki

CS Department of Analytical Chemistry Faculty of Pharmaceutical Sciences, Hoshi University, Shinagawa-ku Tokyo, 142-8501, Japan

SO Journal of Agricultural and Food Chemistry (2002), 50(13), 3637-3646  
CODEN: JAFCAU; ISSN: 0021-8561

PB American Chemical Society

DT Journal

LA English

AB The present work describes the design and synthesis of the structurally unique **hapten**, "bifunctional **hapten**", to produce a group-specific polyclonal antiserum to triclopyr and 3,5,6-trichloro-2-pyridinol. A bifunctional **hapten** was designed and synthesized by conjugating com. available N.epsilon.-2,4-dinitrophenyl (DNP)-L-lysine to triclopyr, and then coupling this to carrier proteins such as bovine serum albumin (BSA). The synthesized bifunctional **hapten** greatly raised the antiserum titer in comparison with that of the conventional **hapten**, triclopyr. Antiserum with a sufficiently high titer to provide the detns. of targeted compds. was obtained only 63 days after the primary immunization. The obtained antiserum showed the highest affinity to triclopyr (IC50 = 3.5 nM) and 3,5,6-trichloro-2-pyridinol (IC50 = 5.1 nM) in homologous ELISA. The cross-reactivities to various agrochems. and some chlorinated phenolic compds. were detd. Significant cross-reactivity was found to the herbicide 2,4,5-T. The antiserum reacted to both triclopyr and its metabolite. Assay sensitivity was evaluated for effects of various assay conditions, including pH value and concns. of org. solvents and detergents. Under optimized assay conditions, the quant. working range of triclopyr ELISA was from 0.1 to 5.2 ng/mL with a limit of detection (LOD) of 0.037 ng/mL, and an IC50 of 0.72 ng/mL. On the other hand, the quant. working range of 3,5,6-trichloro-2-pyridinol ELISA was from 0.13 to 6.0 ng/mL with a LOD of 0.052 ng/mL, and an IC50 of 0.95 ng/mL. Water samples fortified with triclopyr or its metabolite at 1, 5, and 10 ng/mL were directly analyzed without extn. and cleanup by the proposed ELISA. The mean recovery was 101.6%, and the mean coeff. of variation (CV) was 7.1% in the case of the triclopyr ELISA. In the case of the 3,5,6-trichloro-2-pyridinol ELISA, the mean recovery was 99.8%, and the mean CV was 9.5%. The proposed ELISA turned out to be a powerful tool for monitoring of residual triclopyr or 3,5,6-trichloro-2-pyridinol in water samples at trace level.

IT 93-76-5, 2,4,5-T

RL: ARU (Analytical role, unclassified); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)

(prepn. of bifunctional **hapten** for immunochem. detns. of triclopyr and 3,5,6-trichloro-2-pyridinol and cross-reactivity of polyclonal antiserum to)

RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

Cl O-CH<sub>2</sub>-CO<sub>2</sub>H



Cl Cl

# RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Abad, A	2001	49	1707	J Agric Food Chem	HCAPLUS
Abu-Qare, A	2001	25	275	J Anal Toxicol	HCAPLUS
Abu-Qare, A	2001	754	533	J Chromatogr B	HCAPLUS
Abu-Qare, A	2001	39	200	J Chromatogr Sci	HCAPLUS
Apra, C	1999	82	305	J AOAC Int	HCAPLUS
Beasely, H	1997	59	375	Bull Environ Contam	HCAPLUS
Brzak, K	1998	22	203	J Anal Toxicol	HCAPLUS
Cochran, R	1995	33	165	Food Chem Toxicol	HCAPLUS
Eisen, H	1964	3	996	Biochemistry	HCAPLUS
Ellis, R	1996		44	Immunoassays for Res	HCAPLUS
Fleeker, J	1987	70	874	J Assoc Off Anal Che	HCAPLUS
Goodman, J	1978	98	143	Adv Exp Med Biol	HCAPLUS
Hallberg, G	1989	26	299	Agric Ecosyst Environ	HCAPLUS
Hammock, B	1980		321	Pesticide Analytical	HCAPLUS
Harris, A	1995		217	New Frontier in Agro	HCAPLUS
Hill, R	1995	71	99	Environ Res	HCAPLUS
Johnson, B	1996	44	488	J Agric Food Chem	HCAPLUS
Karu, A	1994	42	301	J Agric Food Chem	HCAPLUS
Kido, H	1997	45	414	J Agric Food Chem	HCAPLUS
Koch, H	2001	759	43	J Chromatogr B	HCAPLUS
Kutz, F	1992	37	277	J Toxicol Environ He	HCAPLUS
Lickly, T	1987	13	213	Environ Int	HCAPLUS
Manclus, J	1996	44	3703	J Agric Food Chem	
Manclus, J	1996	44	3710	J Agric Food Chem	HCAPLUS
Manclus, J	1996	44	4063	J Agric Food Chem	HCAPLUS
McCall, P	1986	5	879	Environ Toxicol Chem	HCAPLUS
Mercader, J	1999	47	1276	J Agric Food Chem	HCAPLUS
Midgley, A	1969	63	163	Acta Endocrinol	
Neidert, E	1994	77	18	J AOAC Int	HCAPLUS
Nolan, R	1984	73	8	Toxicol Appl Pharmac	HCAPLUS
Norris, L	1987	39	134	Bull Environ Contam	HCAPLUS
Ormand, J	1999	23	35	J Anal Toxicol	HCAPLUS
Racke, K	1993	131	1	Rev Environ Contam T	HCAPLUS
Sancho, J	2000	14	1485	Rapid Commun Mass Sp	HCAPLUS
Shan, G	2000	48	4032	J Agric Food Chem	HCAPLUS
Sherry, J	1992	23	217	Crit Rev Anal Chem	HCAPLUS
Solomon, K	1988	36	1314	J Agric Food Chem	HCAPLUS
Thoma, K	1989	10	117	Environ Technol Lett	HCAPLUS
Ting, K	1995	690	119	J Chromatogr A	HCAPLUS
Watanabe, E	2000	424	149	Anal Chim Acta	HCAPLUS
Watanabe, E	2000	48	5124	J Agric Food Chem	HCAPLUS
Watanabe, E	2002	50	53	J Agric Food Chem	HCAPLUS
Woodburn, K	1993	12	43	Environ Toxicol Chem	HCAPLUS
Woodburn, K	1993	41	2172	J Agric Food Chem	HCAPLUS

L92 ANSWER 3 OF 31 HCAPLUS COPYRIGHT 2003 ACS

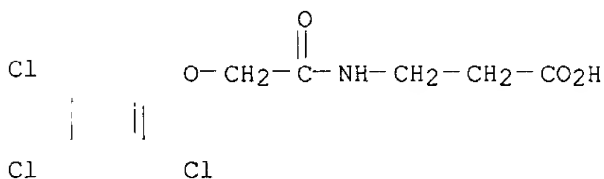
AN 2002:315519 HCAPLUS

DN 137:58744

TI Use of L-Lysine Fluorescence Derivatives as Tracers To Enhance the Performance of Polarization Fluoroimmunoassays. A Study Using Two Herbicides as Model Antigens

AU Hatzidakis, George I.; Tsatsakis, Aristidis M.; Krambovitis, Elias K.;

CS Spyros, Apostolos; Eremin, Sergei A.  
 Laboratory of Toxicology, Medical School, University of Crete, Voutes,  
 Heraklion, 71110, Greece  
 SO Analytical Chemistry (2002), 74(11), 2513-2521  
 CODEN: ANCHAM; ISSN: 0003-2700  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB Fluorescence polarization immunoassay (FPIA) is a convenient homogeneous assay, the use of which is restricted in environmental anal. by low sensitivity and matrix effects. We selected the herbicides 2,4-D and 2,4,5-T to synthesize new L-lysine-based fluorescent tracers using solid-phase chem. In addn., three different immunogens of 2,4,5-T were prepd. for immunization and antibody prodn. The new tracers and antibodies were adapted to FPIA. Tracers with the **hapten** attached to the .alpha.-amino group of L-lysine and fluorescein to the e-amino group exhibited at least a 5-fold increased sensitivity when compared to the previously reported ethylenediamine-based tracer (2,4-D-EDA-F). The isomeric structure (**hapten** attached to the e-amino and fluorescein to the .alpha.-amino group) appeared 7.6 times less sensitive, and all other alternative structures exhibited even lower sensitivities. This observation was confirmed against the monoclonal anti-2,4-D antibody E2/G2 and polyclonal anti-2,4,5-T antibodies. The affinity const. of 2,4-D-EDA-F with E2/G2 was 8.1 times higher when compared with the new tracer, suggesting the more specific nature of the L-lysine-based tracer, the use of which leads to a more sensitive assay. This type of tracer could improve performance and lower substantially the detection limits of FPIAs.  
 IT 101495-68-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (**hapten**; prepn. and use of L-lysine fluorescence derivs. as tracers to enhance performance of polarization fluoroimmunoassays using two herbicides as model antigens)  
 RN 101495-68-5 HCAPLUS  
 CN .beta.-Alanine, N-[(2,4,5-trichlorophenoxy)acetyl]- (6CI, 9CI) (CA INDEX NAME)



IT 93-76-5DP, 2,4,5-T, bound to bovine serume albumin  
 101495-68-5DP, bound to bovine serume albumin  
 RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (immunogen; prepn. and use of L-lysine fluorescence derivs. as tracers to enhance performance of polarization fluoroimmunoassays using two herbicides as model antigens)  
 RN 93-76-5 HCAPLUS  
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

Cl.  $\text{O}-\text{CH}_2-\text{CO}_2\text{H}$

Cl Cl

RN 101495-68-5 HCAPLUS

CN .beta.-Alanine, N-[(2,4,5-trichlorophenoxy)acetyl]- (6CI, 9CI) (CA INDEX NAME)

Cl  $\text{O}-\text{CH}_2-\overset{\text{O}}{\parallel}\text{C}-\text{NH}-\text{CH}_2-\text{CH}_2-\text{CO}_2\text{H}$

Cl Cl

IT 93-76-5, 2,4,5-T

RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)

(prepn. and use of L-lysine fluorescence derivs. as tracers to enhance performance of polarization fluoroimmunoassays using two herbicides as model antigens)

RN 93-76-5 HCAPLUS

CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

Cl  $\text{O}-\text{CH}_2-\text{CO}_2\text{H}$

Cl Cl

IT 107-95-9DP, .beta.-Alanine, resin bound

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and use of L-lysine fluorescence derivs. as tracers to enhance performance of polarization fluoroimmunoassays using two herbicides as model antigens)

RN 107-95-9 HCAPLUS

CN .beta.-Alanine (6CI, 8CI, 9CI) (CA INDEX NAME)

$\text{H}_2\text{N}-\text{CH}_2-\text{CH}_2-\text{CO}_2\text{H}$

# RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
=====	=====	=====	=====	=====	=====
Aguilar-Caballeros, M	1999	381	147	Anal Chim Acta	HCAPLUS
Baker, G	2000	72	5748	Anal Chem	HCAPLUS
Barlos, K	1991	38	555	Int J Pept Protein R	HCAPLUS
Bauer, C	1996	68	2453	Anal Chem	HCAPLUS
Bjarnason, B	1997	347	111	Anal Chim Acta	HCAPLUS
Cuong, N	1999	364	584	Fresenius J Anal Che	HCAPLUS
Dandliker, W	1981	74	2	Methods in Enzymol	

Dzgoev, A	1999	71	5258	Anal Chem	HCAPLUS
Eremin, S	1989	227	287	Anal Chim Acta	HCAPLUS
Eremin, S	1994	27	3013	Anal Lett	HCAPLUS
Eremin, S	1998	36	235	Food Technol Biotech	HCAPLUS
Eremin, S	1995		223	Immunoanalysis of Ag	HCAPLUS
Eremin, S	1998	71	137	Int J Environ Anal C	HCAPLUS
Franek, M	1997	347	163	Anal Chim Acta	HCAPLUS
Franek, M	1994	42	1369	J Agric Food Chem	HCAPLUS
Gerdes, M	1997	252	198	Anal Biochem	HCAPLUS
Gerdes, M	1999	223	217	J Immunol Methods	HCAPLUS
Gonzalez-Martinez, M	1997	69	2812	Anal Chem	HCAPLUS
Hatzidakis, G	1993	98	235	J Reprod Fertil	HCAPLUS
Hatzidakis, G	1993	97	557	J Reprod Fertil	HCAPLUS
Krambovitis, E	1998	273	10874	J Biol Chem	HCAPLUS
Li, K	1999	71	302	Anal Chem	HCAPLUS
Matveeva, E	1996	234	13	Anal Biochem	MEDLINE
Medyantseva, E	1997	347	71	Anal Chim Acta	HCAPLUS
Melnichenko, O	1996	51	512	J Anal Chem	HCAPLUS
Moffat, A	1986			Clarke's Isolation a	
Nistor, C	1999	19	147	Waste Manage	HCAPLUS
Onnerfjord, P	1998	213	31	J Immunol Methods	HCAPLUS
Pourfarzaneh, G	1980	26	730	Clin Chem	
Schobel, U	2000	366	646	Fresenius' J Anal Ch	HCAPLUS
Schwenzer, K	2000	24	726	J Anal Toxicol	HCAPLUS
Sendra, B	1998	47	153	Talanta	HCAPLUS
Sun, W	1997	62	6469	J Org Chem	HCAPLUS
van Dalen, J	1974	5	103	J Immunol Methods	HCAPLUS
Yazinina, E	1999	71	3538	Anal Chem	

L92 ANSWER 4 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:93433 HCAPLUS

DN 136:274696

TI Development of a heterogeneous chemiluminescent flow immunoassay for  
DDT and related compounds

AU Botchkareva, Alexandra E.; Fini, Fabiana; Eremin, Sergei; Mercader, Josep  
V.; Montoya, Angel; Girotti, Stefano

CS Department of Chemistry, Division of Chemical Enzymology, M.V. Lomonosov  
Moscow State University, Moscow, Russia

SO Analytica Chimica Acta (2002), 453(1), 43-52  
CODEN: ACACAM; ISSN: 0003-2670

PB Elsevier Science B.V.

DT Journal

LA English

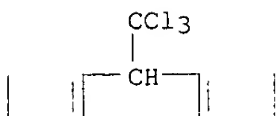
AB A heterogeneous chemiluminescent (CL) flow immunoassay for DDT  
was optimized comparing different types of immunoaffinity supports: beads,  
nylon coils and membranes (membranes HyBond-N+). In order to characterize  
solid immunoaffinity supports two basic immunoassay formats were  
performed, using enzyme-labeled secondary and enzyme-labeled specific  
monoclonal antibodies (MAbs). In both formats, **hapten** DDT5  
conjugated to ovalbumin immobilized on solid supports, according to the  
appropriate immobilization procedure, enzyme label (horseradish  
peroxidase, HRP) and luminescent detection (luminol/H2O2/p-iodophenol),  
were used. The lowest limit of detection (LOD), 1 nM p,p-DDT,  
was obtained with a membrane-based flow immunoassay with HRP-labeled  
specific antibody. Beads and packed tubing were discarded as supports  
because of the difficulties encountered for reproducible packing and the  
occurrence of light scattering (beads), which seriously compromised the  
performance and reproducibility of the flow immunoassay.

IT 50-29-3, analysis

RL: ANT (Analyte); ANST (Analytical study)  
(heterogeneous chemiluminescent flow immunoassay for DDT and  
related compds.)

RN 50-29-3 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



Cl

Cl

## RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Abad, A	1997	45	3694	J Agric Food Chem	HCAPLUS
Anon	1991		565	Casarett and Doull's	
Butler, J	2000	22	4	Methods	HCAPLUS
Girrotti, S	1989	227	29	Anal Chim Acta	HCAPLUS
Girrotti, S	1990	115	889	Analyst	HCAPLUS
Gonzalez-Martinez, M	1997	347	199	Anal Chim Acta	HCAPLUS
Gubitz, G	1993	283	421	Anal Chim Acta	
Leonard, M	1997	699	3	J Chromatogr, B Biom	HCAPLUS
Longnecker, M	1997	18	211	Ann Rev Public Health	MEDLINE
Massoom, M	1994	166	111	Anal Chim Acta	
Matson, R	1988	458	67	J Chrom	HCAPLUS
Morais, S	1999	224	101	J Immunol Meth	HCAPLUS
Rhemrev-Boom, M	2001	24	825	J Pharm Biomed Anal	HCAPLUS
Ritter, L	1995			Persistent Organic P	
Roda, A	1998	3	155	Ligand Assay	
Rubtsova, M	1998	13	75	Biosens Bioelectron	HCAPLUS
Wilson, M	1978		215	Immunofluorescence a	HCAPLUS

L92 ANSWER 5 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:92013 HCAPLUS

DN 136:258696

TI Development of the immunoassay method for express determination of  
**DDT**

AU Bochkareva, A. E.; Popova, V. A.; Eremin, S. A.

CS Khim. Fak., Mosk. Gos. Univ. im. M. V. Lomonosova, Moscow, 119899, Russia

SO Agrokhimiya (2001), (11), 69-74

CODEN: AGKYAU; ISSN: 0002-1881

PB MAIK Nauka

DT Journal

LA Russian

AB Polarization fluoroimmunoassay was developed for express detn. of the organochlorine pesticide DDT. Fluorescein-marked **DDT** deriv. was synthesized, and its binding to specific monoclonal antibodies was studied in order to optimize the method. The detection limit was 3 .nu.g.cntdot.mL-1 DDT with the diapason of detected amts. from 3 to 1000 .nu.g.cntdot.mL-1. The method allows the detn. of the total amt. of major metabolites and isomers of **DDT**, without the risk of interference from other organochlorine pesticides. The method permits the anal. of 500 water samples per day without the need of any preprocessing.

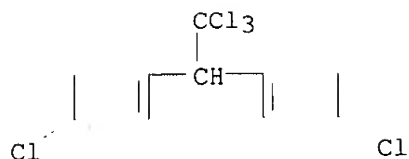
IT 50-29-3, analysis 115-32-2, Dicofof

RL: ANT (Analyte); ANST (Analytical study)

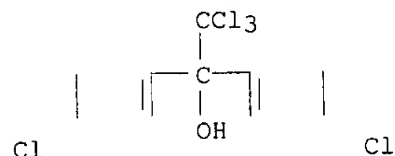
(assessment of specificity of **DDT** detn. immunoassay)

RN 50-29-3 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



RN 115-32-2 HCAPLUS  
 CN Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)- (9CI) (CA INDEX NAME)



L92 ANSWER 6 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:854910 HCAPLUS

DN 136:114150

TI Synthesis of **haptens** and protein conjugates for the development of immunoassays for the insect growth regulator fenoxycarb

AU Szurdoki, Ferenc; Szekacs, Andras; Le, Hong M.; Hammock, Bruce D.

CS Department of Entomology and Cancer Research Center, University of California, Davis, CA, 95616, USA

SO Journal of Agricultural and Food Chemistry (2002), 50(1), 29-40  
 CODEN: JAFCAU; ISSN: 0021-8561

PB American Chemical Society

DT Journal

LA English

AB Sensitive and selective enzyme-linked immunosorbent assays (ELISAs) in the immobilized antigen format were developed for fenoxycarb (1), an insect growth regulator (IGR). The parent mol. [ethyl 2-(4-phenoxyphenoxy)ethylcarbamate] was derivatized at several positions to obtain **haptens** (2-5) that were used to produce protein conjugates and rabbit polyclonal antisera. Amino derivs. of fenoxycarb at the terminal and internal rings (2 and 3, resp.) were linked to carrier proteins by azo coupling. Carboxyalkyl-spacer groups were attached to the Et group and the nitrogen atom of the target compd. (1) to obtain **haptens** 4 and 5, resp. **Hapten**-homologous ELISAs based on protein conjugates of compds. 2 and 4 detd. fenoxycarb in the mid-ppb range (IC50, 102 and 95 ppb, resp.). A more sensitive **hapten**-heterologous ELISA (IC50, 17 ppb; detection limit 0.5 ppb) involved the antiserum raised against a conjugate of **hapten** 2 and the plate-coating antigen obtained from compd. 3. These assays displayed no significant interferences with photodegrdn. products of fenoxycarb, the IGRs methoprene and pyriproxyfen, and a variety of pesticides including the pyrethroids fenvalerate and cypermethryn, the phenoxyacetic acid herbicide 2,4-D, DDT, and the nitrodiphenyl ether herbicides acifluorfen and fluorodifen.

# RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Anon	2001			Personal communicati	
Anwer, M	1989	54	1284	J Org Chem	HCAPLUS
Barr, A	1997	9	401	J Vet Diagn Invest	MEDLINE
Bicchi, C	1990	30	13	Pestic Sci	HCAPLUS



Bortolotti, L	2000	35	265	Appl Entomol Zool	HCAPLUS
Clark, J	1976	17	3361	Tetrahedron Lett	
Climent, M	1996	738	225	J Chromatogr A	HCAPLUS
Climent, M	1996	738	225	J Chromatogr A	HCAPLUS
Climent, M	1997	761	341	J Chromatogr A	HCAPLUS
Danilova, N	1994	173	111	J Immunol Methods	HCAPLUS
Darvas, B	1994	118	51	J Appl Entomol	
de Marre, A	1995	36	4031	Polymer	HCAPLUS
Dedos, S	1996	104	213	Gen Compar Endocrino	HCAPLUS
Dedos, S	1999	29	723	Insect Biochem Molec	HCAPLUS
Dhadialla, T	1998	43	545	Annu Rev Entomol	HCAPLUS
Dorn, S	1981	88	269	Z Pflanzenkrankh Pfl	HCAPLUS
Edwards, J	1991	27	31	J Stored Prod Res	HCAPLUS
Evans, R	1995	9	235	Med Vet Entomol	MEDLINE
Fischer, U	1980			US 4215139	HCAPLUS
Flanagan, M	1996	118	6078	J Am Chem Soc	HCAPLUS
Galve, R	2000	72	2237	Anal Chem	HCAPLUS
Giraudi, G	1998	35	183	Anal Commun	HCAPLUS
Grenier, S	1993	122	369	Ann Appl Biol	HCAPLUS
Haenni, R	1988	XVI	21	Analytical Methods f	
Hermanson, G	1996			Bioconjugate Techniq	
Hoddle, M	2001	20	122	Biol Control	HCAPLUS
Hosmer, A	1998	17	1860	Environ Toxicol Chem	HCAPLUS
Huber, I	1991	128	375	Acta Chim Hung	HCAPLUS
Ikawa, K	1959	79	1498	Yakugaku Zasshi	HCAPLUS
Kamimura, M	1998	33	333	Appl Entomol Zool	HCAPLUS
Key, P	1994	29	873	J Environ Sci Health	
Klamann, D	1992	E16d	327	Methoden der organis	
Kozikowski, A	1996	37	3279	Tetrahedron Lett	HCAPLUS
Le, H	1996	31	459	J Environ Sci Health	
Lee, B	1989	43	827	Bull Environ Contam	HCAPLUS
Li, K	2000	48	3378	J Agric Food Chem	HCAPLUS
Manclus, J	1996	44	4052	J Agric Food Chem	HCAPLUS
March, J	1992		641	Advanced Organic Che	
Mauchamp, B	1989	26	283	Pestic Sci	HCAPLUS
Monconduit, H	1999	40	141	Arch Insect Biochem	HCAPLUS
Natangelo, M	1999	859	193	J Chromatogr A	HCAPLUS
Okot-Kotber, B	1991	19	77	Sociobiology	
Olah, G	1978	75	1045	Proc Natl Acad Sci U	HCAPLUS
Ram, S	1996	48	79	Int J Peptide Protei	HCAPLUS
Rarick, M	1933	55	1289	J Am Chem Soc	HCAPLUS
Sanborn, J	1998	46	2407	J Agric Food Chem	HCAPLUS
Schneider, M	1995	41	23	J Insect Physiol	HCAPLUS
Sherry, J	1997	34	1011	Chemosphere	HCAPLUS
Solomon, M	1990	65	535	J Hortic Sci	HCAPLUS
Szekacs, A	1999	399	127	Anal Chim Acta	HCAPLUS
Szekacs, A	1995	43	2083	J Agric Food Chem	HCAPLUS
Szekacs, A	1995			PACIFICHEM '95 Inter	
Szurdoki, F	2000	72	5250	Anal Chem	HCAPLUS
Szurdoki, F	1992	40	1459	J Agric Food Chem	HCAPLUS
Szurdoki, F	1996	31	451	J Environ Sci Health	MEDLINE
Szurdoki, F	1995		39	New Frontiers of Agr	HCAPLUS
Tomlin, C	1994		442	The Pesticide Manual	
Traylor, P	1967	6	881	Biochemistry	HCAPLUS
U S Epa	1988	1	373	Pesticide Fact Handb	
Ujvary, I	1996	32	659	Arch Insect Biochem	HCAPLUS
Wang, L	2000	30	227	Synth Commun	HCAPLUS
Wang, Z	2000	17	913	Food Addit Contam	
Wengatz, I	1998	46	2211	J Agric Food Chem	HCAPLUS
Wong, S	1991			Chemistry of Protein	

- TI Polarization fluoroimmunoassays as express method for environmental monitoring.
- AU Eremin, Sergei A.
- CS Department of Chemical Enzymology, M.V.Lomonosov Moscow State University, Moscow, 119899, Russia
- SO Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000 (2000), ANYL-214 Publisher: American Chemical Society, Washington, D. C.  
CODEN: 69CLAC
- DT Conference; Meeting Abstract
- LA English
- AB The polarization fluoroimmunoassay (PFIA) could be one of more applicable technique for express detection of pesticide. PFIA is competitive immunoassay method based on the increase in the polarization of the fluorescence of a small fluorescent-labeled **hapten** (tracer) when its bounded by specific antibody. If the sample contains unlabeled analyte, tracer will compete for binding with antibody and the polarization signal will fall. This PFIA method is direct assay without any sample pre-treatment and washing steps. Total time for assay is not more than 1 min with sensitivity about 10 ng/mL in 0.1 mL sample. The influence of structure of tracer and affinity and specificity of antibodies on the anal. performance of PFIA was examd. PFIA for several pesticides (triazines, chlorophenoxyacid herbicides, DDT, **endosulfans**, isoproturon, acetochlor, propanil, metsulfuron-methyl) were developed in our group in last few years. The advantages and limitations of PFIA will be discussed.
- L92 ANSWER 8 OF 31 HCAPLUS COPYRIGHT 2003 ACS
- AN 1999:290257 HCAPLUS
- DN 130:348459
- TI Development of monoclonal antibody-based immunoassays to the N-methylcarbamate pesticide carbofuran
- AU Abad, Antonio; Moreno, Maria Jose; Montoya, Angel
- CS Laboratorio Integrado de Bioingenieria, Universidad Politecnica de Valencia, Valencia, 46022, Spain
- SO Journal of Agricultural and Food Chemistry (1999), 47(6), 2475-2485  
CODEN: JAFCAU; ISSN: 0021-8561
- PB American Chemical Society
- DT Journal
- LA English
- AB To produce monoclonal antibodies (MAbs) to carbofuran, 3 compds. with carboxylic spacer arms of different lengths introduced at the carbamate group of the analyte structure were synthesized, conjugated to proteins, and used as immunizing **haptens** in mice. MAbs were subsequently characterized for affinity and specificity in the conjugate-coated and antibody-coated format, using newly synthesized compds. as heterologous assay **haptens**. Depending on the immunoreagent combination and assay format, competitive assays with I50 values in the 1.2-10.2 nM (0.27-2.27 ng/mL) range were obtained. LIB-BFNB67 MAb in combination with the **hapten** BFNH, coupled either to horseradish peroxidase or to ovalbumin, was used to develop a direct and an indirect ELISA, resp. Optimized immunoassays displayed very similar anal. characteristics, with an I50 value around 0.7 ng/mL and a limit of detection around 0.08 ng/mL. Both immunoassays were able to tolerate the presence of methanol up to a 15% concn. Compds. very similar in structure to carbofuran (benfuracarb, furathiocarb, bendiocarb, and carbofuran-hydroxy) exhibited cross-reactivity values in the 18-37% range, but major N-methylcarbamate pesticides were not recognized by the MAb. These immunoassays should allow the rapid, low-cost, and sensitive detn. of carbofuran in food, in soils, and in the environment, at levels of regulatory and practical importance.
- IT 107-95-9, 3-Aminopropanoic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant in **hapten** prepn. for carbofuran ELISA)

RN 107-95-9 HCAPLUS

CN .beta.-Alanine (6CI, 8CI, 9CI) (CA INDEX NAME)

H<sub>2</sub>N-CH<sub>2</sub>-CH<sub>2</sub>-CO<sub>2</sub>H

## RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Abad, A	1994	42	1818	J Agric Food Chem	HCAPLUS
Abad, A	1997	45	1486	J Agric Food Chem	HCAPLUS
Abad, A	1997	45	1495	J Agric Food Chem	HCAPLUS
Abad, A	1997	45	3694	J Agric Food Chem	HCAPLUS
Abad, A	1998	46	2417	J Agric Food Chem	HCAPLUS
Anon	1995			Farm Chemicals Handb	
Augspurger, T	1996	32	113	J Wildlife Dis	HCAPLUS
Bakowski, R	1994	77	1568	J AOAC Int	HCAPLUS
Ballesteros, E	1993	65	1773	Anal Chem	HCAPLUS
Bekheit, H	1993	41	2220	J Agric Food Chem	HCAPLUS
CDPR (California Depart	1993			Pesticide Use Report	
Dankwardt, A	1997	35	164	Food Technol Biotech	
Farber, H	1993	41	217	J Agric Food Chem	
Gunderson, E	1995	78	1353	J AOAC Int	HCAPLUS
Gupta, R	1994	43	383	J Toxicol Environ He	HCAPLUS
Hammock, B	1995		1	Immunoassays for Agr	HCAPLUS
Hammock, B	1990		112	Immunological Method	HCAPLUS
James, P	1995	13	181	Ecol Econ	
Jefferis, R	1991			Principles and Pract	
Jourdan, S	1995	43	2784	J Agric Food Chem	HCAPLUS
Kaufman, B	1991	74	239	J Assoc Off Anal Che	HCAPLUS
Langone, J	1982	84	628	Methods Enzymol	HCAPLUS
Lehotay, S	1993	41	2006	J Agric Food Chem	HCAPLUS
Liska, I	1996	733	235	J Chromatogr A	HCAPLUS
Manclus, J	1996	44	3703	J Agric Food Chem	HCAPLUS
Manclus, J	1996	44	3710	J Agric Food Chem	HCAPLUS
Manclus, J	1996	44	4052	J Agric Food Chem	HCAPLUS
Manclus, J	1996	44	4063	J Agric Food Chem	HCAPLUS
McGarvey, B	1993	642	89	J Chromatogr	HCAPLUS
Meulenberg, E	1995	29	553	Environ Sci Technol	HCAPLUS
Mueller, H	1990	13	759	J High Resolut Chrom	HCAPLUS
Nam, K	1994	42	1469	J Agric Food Chem	HCAPLUS
Nowinski, R	1979	93	111	Virology	HCAPLUS
Raab, G	1983	29	1757	Clin Chem	HCAPLUS
Rajkowski, K	1977	29	701	Steroids	HCAPLUS
Rouchaud, J	1990	25	109	Toxicol Environ Chem	HCAPLUS
Rule, G	1994	66	230	Anal Chem	HCAPLUS
Schneider, P	1994	42	413	J Agric Food Chem	HCAPLUS
Sherry, J	1992	23	217	Crit Rev Anal Chem	HCAPLUS
Skerritt, J	1992	75	519	J AOAC Int	HCAPLUS
Tomlin, C	1994			The Pesticide Manual	
Van Emon, J	1992	64	78A	Anal Chem	HCAPLUS
Yang, S	1996	754	13	J Chromatogr A	HCAPLUS

L92 ANSWER 9 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:475737 HCAPLUS

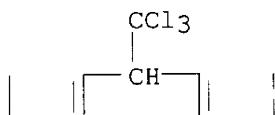
DN 129:229792

TI Development of a Panel of Immunoassays for Monitoring DDT, Its  
Metabolites, and Analogs in Food and Environmental MatrixesAU Beasley, Helen L.; Phongkham, Thipsavanh; Daunt, Margaret H.; Guihot,  
Simone L.; Skerritt, John H.

CS CSIRO Plant Industry, North Ryde, 2113, Australia  
 SO Journal of Agricultural and Food Chemistry (1998), 46(8), 3339-3352  
 CODEN: JAFCAU; ISSN: 0021-8561  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB A panel of antisera was prepd. using analogs and derivs. of metabolites of the organochlorine insecticide, p,p'-DDT as **haptens**. The assays developed exhibited differing cross-reactions for different DDT analogs and metabolites, and the choice of **hapten** for the detecting enzyme conjugate had almost as much effect on assay specificity and sensitivity as the structure of the **hapten** used for antibody prodn. Those assays developed using **hapten**, based on esters of bis(p-chlorophenyl)acetic acid (DDA), typically detected DDA with greater sensitivity than p,p'-DDT or p,p'-DDE. The most sensitive assay for p,p'-DDT (lower limit of detection of 0.3 .mu.g/L) was obtained using an immunogen based on bis(p-chlorophenyl)ethanol, although a significant cross-reaction with dichlorodiphenyltrichloroethane (DDD) and DDE was obtained. The most specific assay for p,p'-DDT was obtained using an immunogen that includes all elements of the DDT structure, except that one of the p-chloro groups was replaced by .beta.-alanine carboxamide for coupling to carrier proteins. Antibodies based on a similar DDE **hapten** exhibited specificity for p,p'-DDE over p,p'-DDT. Greater specificity and sensitivity for **dicofol** were obtained by using an immunogen derived from ester hydrolysis of chlorbenzilate. The assays provided methods for detection of p,p'-DDT plus p,p'-DDE. Some of the immunoassays were applied to the detection of DDT and DDE in water, soil, and selected foods.

IT 50-29-3, DDT, analysis 115-32-2,  
**Dicofol**  
 RL: ANT (Analyte); ANST (Analytical study)  
 (development of a panel of immunoassays for monitoring DDT,  
 its metabolites, and analogs in food and environmental matrixes)

RN 50-29-3 HCAPLUS  
 CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)

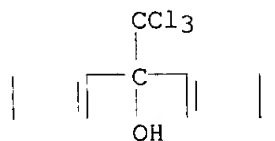


Cl

Cl

RN 115-32-2 HCAPLUS

CN Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)- (9CI) (CA INDEX NAME)



Cl

Cl

IT 107-95-9, .beta.-Alanine

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (development of a panel of immunoassays for monitoring DDT,

its metabolites, and analogs in food and environmental matrixes)  
 RN 107-95-9 HCAPLUS  
 CN .beta.-Alanine (6CI, 8CI, 9CI) (CA INDEX NAME) .

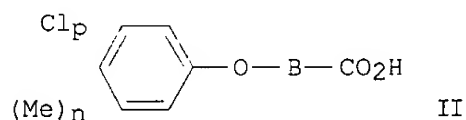
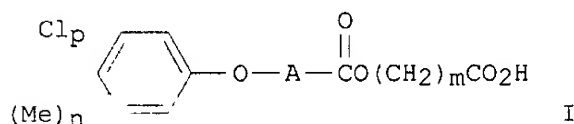
H<sub>2</sub>N-CH<sub>2</sub>-CH<sub>2</sub>-CO<sub>2</sub>H

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Abad, A	1997	45	3694	J Agric Food Chem	HCAPLUS
Agarwal, H	1994	29	87	J Environ Sci Health	
Akerstrom, B	1985	135	2589	J Immunol	MEDLINE
Banerjee, B	1987	38	798	Bull Environ Contamn	HCAPLUS
Banerjee, B	1996	24	553	Med Sci Res (India)	HCAPLUS
Boul, H	1995	38	257	N Z J Agric Res	HCAPLUS
Bowman, M	1960	3	406	J Agric Food Chem	
Brady, J	1989		262	Biological Monitorin	HCAPLUS
Brewerton, H	1969	12	194	N Z J Sci	HCAPLUS
Burgisser, D	1990	166	1228	Biochem Biophys Res	MEDLINE
Centero, E	1970	37	1	Int Arch Allergy App	
Chattaway, F	1934		701	J Chem Soc	HCAPLUS
Clark, D	1995	54	817	Bull Environ Contamn	HCAPLUS
de Faubert, M	1964	89	168	Analyst	
Dinesman, A	1905	141	201	C R Hebd Seances	
Domagalski, J	1996	57	284	Bull Environ Contam	HCAPLUS
Edward, S	1993	5	129	Food Agric Immunol	HCAPLUS
Edwards, C	1973		170	Persistent pesticide	
Friedman, L	1960	25	877	J Org Chem	HCAPLUS
Furuya, K	1981	18	95	Mol Immunol	HCAPLUS
Gee, S	1995		243	New Diagnostics in C	HCAPLUS
Gillespie, M	1994	42	305	Pestic Sci	HCAPLUS
Guenzi, W	1967	156	1116	Science	HCAPLUS
Haas, G	1968	129	546	Proc Soc Exp Biol Me	HCAPLUS
Harrison, R	1990		14	Immunoassays for Tra	HCAPLUS
Haskelberg, L	1949	14	498	J Org Chem	HCAPLUS
Hassall, K	1990		169	The Biochemistry and	
Hill, A	1991	39	1882	J Agric Food Chem	HCAPLUS
Hill, A	1993	41	2011	J Agric Food Chem	HCAPLUS
Kapoor, I	1973	21	310	J Agric Food Chem	HCAPLUS
Kawano, M	1992	48	163	Int J Environ Anal C	HCAPLUS
Kelce, W	1995	375	581	Science	MEDLINE
Lee, N	1995	43	1730	J Agric Food Chem	HCAPLUS
Lee, N	1998	46	520	J Agric Food Chem	HCAPLUS
Liapis, K	1995	54	579	Bull Environ Contam	HCAPLUS
McAdam, D	1992	40	1471	J Agric Food Chem	
Mukherjee, I	1993	76	283	J AOAC Int	HCAPLUS
Pham, T	1993	26	1595	Chemosphere	
Prapamontol, T	1991	552	249	J Chromatogr	HCAPLUS
Sapp, R	1989	37	1313	J Agric Food Chem	HCAPLUS
Schwarzbach, S	1988	17	219	Arch Environ Contam	HCAPLUS
Shivaramaiah, H	1998			Seeking agricultural	
Tuinstra, L	1980	63	952	J Assoc Off Anal Che	HCAPLUS
U S Epa	1985			Dicofol Special Revi	
Waliszewski, S	1996	79	784	J AOAC Int	HCAPLUS
Waliszewski, S	1982	65	677	J Assoc Off Anal Che	HCAPLUS
Waterhouse, D	1972			The Use of DDT in Au	
World Health Organizati	1969			Symposium for the Bi	
Worthing, C	1987			The Pesticide Manual	

AN 1998:239541 HCAPLUS  
 DN 129:40159  
 TI Phenoxyacetic acids, their macromolecular conjugates, antibodies to the conjugates, hybridomas producing the antibodies, and immunoassay using the antibodies  
 IN Kawada, Mitsuyasu; Moriso, Kosuke; Takewaki, Shunichi; Miyake, Shiro; Yamaguchi, Yuki  
 PA Kankyo Meneki Gijutsu Kenkyusho K. K., Japan  
 SO Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10101615	A2	19980421	JP 1996-254777	19960926
PRAI	JP 1996-254777		19960926		
OS	MARPAT 129:40159				
GI					



AB Phenoxyacetic acids I (A = linear or branched C1-3 alkylene; m = 1-10; n, p = 0-3) are conjugated with macromol. compds., and the conjugates are used as antigens for prodn. of antibodies (including fragments) reactive with II [B = CH2, CH2:CH2, (CH2)3; n, p = same as above]. Also claimed are an antibody named TCA28-50, hybridomas, e.g. FERM P-15848, producing the above antibodies, and an immunoassay method for detg. II using the antibodies. A mouse was immunized with conjugates of 2,4,5-Cl3C6H2OCH2CO2(CH2)3CO2H (prepn. given) with keyhole limpet hemocyanin, and splenocyte from the mouse was fused with P3-X63-Ag myeloma cells to give a hybridoma named TCA28-50 (FERM P-15848) producing monoclonal antibody TCA28-50 reactive with 2,4,5-T. Sensitivity of indirect competitive ELISA for 2,4,5-T using the monoclonal antibody was not much affected by MeOH at the concn. .ltoreq.40%.

IT 93-76-5  
 RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)  
 (immunoassay of herbicide 2,4,5-T using antibodies produced using macromol. conjugates of **haptenic** phenoxyacetic acids)

RN 93-76-5 HCAPLUS  
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

C1 O-CH<sub>2</sub>-CO<sub>2</sub>H



C1 C1

IT 93-76-5DP, conjugates with BSA or keyhole limpet hemocyanin  
 RL: BUU (Biological use, unclassified); PNU (Preparation, unclassified);  
 BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (immunoassay of herbicide 2,4,5-T using antibodies produced using  
 macromol. conjugates of **haptenic** phenoxyacetic acids)  
 RN 93-76-5 HCAPLUS  
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

C1 O-CH<sub>2</sub>-CO<sub>2</sub>H



C1 C1

L92 ANSWER 11 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:73885 HCAPLUS

DN 128:177817

TI A highly specific polyclonal antiserum to the environmental contaminant  
 1,1,1-trichloro-2,2-bis-(4-chlorophenyl)-ethane (p,p'-DDT)

AU Giraudi, Gianfranco; Baggiani, Claudio; Cosmaro, Antonella; Santia,  
 Emilio; Vanni, Adriano

CS Dipartimento Chimica Analitica, Universita Torino, Turin, I-10125, Italy

SO Fresenius' Journal of Analytical Chemistry (1998), 360(2), 235-240

CODEN: FJACES; ISSN: 0937-0633

PB Springer-Verlag

DT Journal

LA English

AB A very selective polyclonal antiserum against 1,1,1-trichloro-2,2-bis-(4-chlorophenyl)-ethane (p,p'-DDT) was obtained by a careful choice of the **haptenic** structure (2,2-bis-(4-chlorophenyl)-ethanol hemisuccinate). This **haptene** was conjugated to BSA to prep. the immunogen. The effects of different types of solid phases on the equil. reaction between the **haptene** on solid phase and the polyclonal antiserum were evaluated to obtain a fine tuning of the antiserum performances in terms of specificity for p,p'-DDT and sensitivity to low levels of this pesticide. The calibration curves obtained show that it is possible to set up a sensitive assay for p,p'-DDT, employing a p,p'-dichlorodiphenylacetic acid-based solid phase, with a detection limit of 0.12 ng/mL and a working range of about 0.21-40 ng/mL. Selectivity towards several p,p'-DDT-related substances was good (o,p-DDT 17%, p,p'-DDD 1.2%, o,p-DDD 6.3%, p,p'-DDE 6.7%).

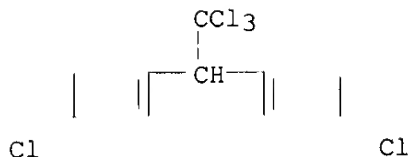
IT 50-29-3, analysis

RL: ANT (Analyte); BSU (Biological study, unclassified); POL (Pollutant);  
 ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)

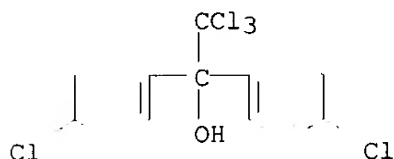
(a highly specific polyclonal antiserum to the environmental  
 contaminant p,p'-DDT)

RN 50-29-3 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



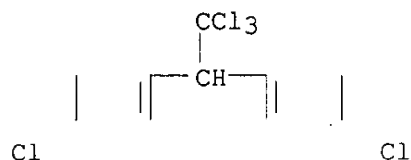
IT 115-32-2, 2,2,2-Trichloro-1,1-bis-(4-chlorophenyl)-ethanol  
 RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)  
 (selectivity of polyclonal antiserum towards p,p'-DDT-related substances)  
 RN 115-32-2 HCAPLUS  
 CN Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)- (9CI) (CA INDEX NAME)



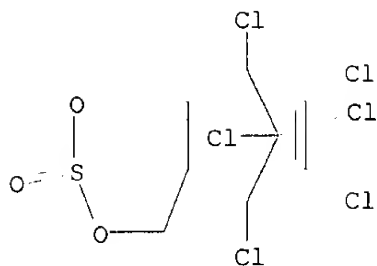
L92 ANSWER 12 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1997:681531 HCAPLUS  
 DN 127:356015  
 TI Development of broad spectrum antibodies to heat shock protein 70s as biomarkers for detection of multiple stress by pollutants and environmental factors  
 AU Dunlap, Debra Y.; Matsumura, Fumio  
 CS Department of Environmental Toxicology and the Center for Environmental Health Research, University of California, Davis, CA, 95616-8588, USA  
 SO Ecotoxicology and Environmental Safety (1997), 37(3), 238-244  
 CODEN: EESADV; ISSN: 0147-6513  
 PB Academic  
 DT Journal  
 LA English  
 AB To test the hypothesis that broad spectrum antibodies may be developed as biomarkers useful in detecting the consequence of combined environmental stresses in a wide variety of tissues and organisms, a stretch of 16 amino acids, TVPAYFNDSQRQATKDA, a well-conserved portion of heat shock 70 proteins, was identified, against which specific antibodies could be designed. This stretch of peptide was synthetically prepd. and used as a **hapten** for antibody prepn. by coupling to keyhole limpet hemocyanin, injecting into a rabbit, collecting its blood, and purifying an IgG-rich fraction. The resulting polyclonal antibody was found to react with many heat-shock protein (HSP) 70s in every species tested so far, including two species of fish and one amphibian, two arthropod, and one plant species. To relate the reactivity of this antibody prepn. to heat shock proteins known to be induced by environmental stress, a Western blot assay method was used to study several organisms under unstressed or stressed conditions. Invariably, heat treatment caused a rise in the titer or HSP70 and/or glucose-regulated proteins. In addn., in some species chem. stresses were also found to be manifested in the form of an increased titer of these proteins.  
 IT 50-29-3, biological studies  
 RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)  
 (antibodies to heat shock protein 70s as biomarkers for detection of multiple stress by pollutants and environmental factors)



RN 50-29-3 HCAPLUS  
CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



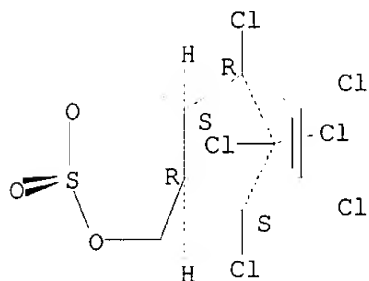
L92 ANSWER 13 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
AN 1997:636735 HCAPLUS  
DN 127:201341  
TI Application of immunoassays to studies of the environmental fate of **endosulfan**  
AU Lee, Nanju; Beasley, Helen L.; Kimber, Stephen W. L.; Silburn, Mark; Woods, Nicholas; Skerritt, John H.; Kennedy, Ivan R.  
CS CRC for Sustainable Cotton Production Department of Agricultural Chemistry and Soil Science, University of Sydney, Sydney, 2006, Australia  
SO Journal of Agricultural and Food Chemistry (1997), 45(10), 4147-4155  
CODEN: JAFCAU; ISSN: 0021-8561  
PB American Chemical Society  
DT Journal  
LA English  
AB A comprehensive validation of three **endosulfan** immunoassays (two microwell assays and a tube assay) using field samples was conducted as part of a study on the environmental fate of **endosulfan** applied to Australian cotton fields. The validation included an initial examn. of the relationship between tube and microwell immunoassays and then correlations between immunoassay data and gas-liq. chromatog. (GLC) analyses for several thousand water (in a format with a detection limit of 0.2 .mu.g L-1) and soil samples and hundreds of aerial drift samples. In all cases, the immunoassay data proved to be closely correlated with GLC analyses, indicating that these immunoassays provide a reliable quantification of **endosulfan**. Validation of immunoassay methods against GLC by providing reliable correlations was an important result, but in this study immunoassay also was useful in the research program for improving protocols for sampling and anal. by GLC. This was possible because of the demonstrated advantages of immunoassay for greater speed and higher sample throughput with less complicated sample prepn., which allows many more samples to be analyzed and a more comprehensive study of field processes such as rain simulation. The ability of immunoassay to provide a summation of the three toxic forms of **endosulfan** (.alpha., .beta., and sulfate) was exploited. It is concluded that this immunoassay for **endosulfan** is quant. using soil, water, and aerial drift samples and that it would allow the possibility of decision making at field sites, improving environmental management of **endosulfan** residues.  
IT 115-29-7, Endosulfan 959-98-8, .alpha.-Endosulfan 33213-65-9, .beta.-Endosulfan  
RL: ANT (Analyte); ANST (Analytical study)  
(application of immunoassays to studies of environmental fate of **endosulfan**)  
RN 115-29-7 HCAPLUS  
CN 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide (9CI) (CA INDEX NAME)



RN 959-98-8 HCAPLUS

CN 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3.alpha.,5a.beta.,6.alpha.,9.alpha.,9a.beta.)- (9CI) (CA INDEX NAME)

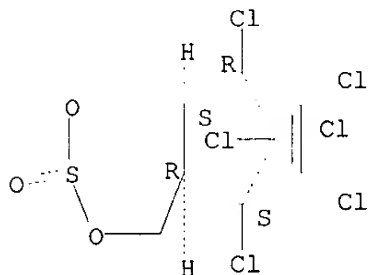
Relative stereochemistry.



RN 33213-65-9 HCAPLUS

CN 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3.alpha.,5a.alpha.,6.beta.,9.beta.,9a.alpha.)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L92 ANSWER 14 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:610337 HCAPLUS

TI **Hapten** Synthesis and Production of Monoclonal Antibodies to DDT and Related Compounds

AU Abad, Antonio; Manclus, Juan J.; Mojarrad, Fatemeh; Mercader, Josep V.; Miranda, Miguel A.; Primo, Jaime; Guardiola, Vicente; Montoya, Angel

CS Laboratorio Integrado de Bioingenieria, Universidad Politecnica de Valencia, Valencia, 46022, Spain

SO J. Agric. Food Chem. (1997), 45(9), 3694-3702

CODEN: JAFCAU; ISSN: 0021-8561

PB American Chemical Society

DT Journal

LA English  
AB This work describes the prodn. and characterization of monoclonal antibodies (MAbs) to the organochlorine insecticide DDT and their incorporation into several ELISA configurations. A collection of **DDT haptens** was synthesized by introducing appropriate spacers at two sites of the analyte mol. structure. From mice immunized with **hapten**-protein conjugates, MAbs with I50 values to p,p'-DDT in the 2-11 nM range in homologous conjugate-coated assays were obtained. According to their cross-reactivity pattern with DDT isomers and metabolites, MAbs can be classified as class-specific or DDT-specific antibodies. Both types of MAbs were obtained from mice immunized with the same **hapten**-protein conjugate simply by applying a different selection criterion in the screening of fusion supernatants. These immunoassays are potentially very valuable anal. tools for the rapid and sensitive detn. of DDT and congeners in food and the environment and for monitoring human exposure to these ubiquitous and toxic compds.

L92 ANSWER 15 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:500215 HCAPLUS

DN 127:107992

TI Preparation of antibodies to halogenated benzylate for immunoassay of agrochemicals

IN Miyake, Shiro; Kono, Eiji; Okawa, Hideo

PA Nihon Nohyaku Co., Ltd., Japan; Iatron Laboratories, Inc.

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09176200	A2	19970708	JP 1995-352015	19951227
PRAI	JP 1995-352015		19951227		
OS	MARPAT 127:107992				

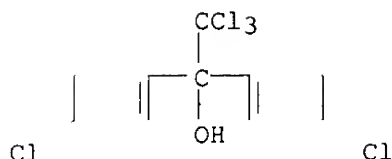
AB Disclosed is a method for the prepn. of (monoclonal) antibodies to halogenated benzylate by using a synthetic **hapten** (X-Ph)2-C(R1)(R2) [X-Ph=para-halogenated phenyl; R1=B-(CH2)n-A (A=group for binding with carriers; n=1-5; B=O, CO2C(R3), where R3=H, Me, Et); R2=OH, CO2R4, where R4= C1-4 alkyl] conjugated with a high mol.-wt. carrier as an immunogen. The (monoclonal) antibodies are convenient for the detn. of the halogenated benzylate-type agrochem. left in crops or soils. Synthesis of **haptens** 5-[2,2-bis(4-chlorophenyl)-2-hydroxyacetyloxy]hexanoic acid and 4-[bis(4-chlorophenyl)-isopropoxycarbonylmethyl]butyric acid, conjugation of the **haptens** with ovalbumin or bovine serum albumin, and use of the immunogens for the prepn. of polyclonal and monoclonal antibodies were demonstrated. Immunoassay of various halogenated benzylate-type agrochem. using the prepd. antibodies was also demonstrated.

IT 115-32-2

RL: ANT (Analyte); ANST (Analytical study)  
(immunoassay of; prepn. of antibodies to halogenated benzylate for immunoassay of agrochems.)

RN 115-32-2 HCAPLUS

CN Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-  
(trichloromethyl)- (9CI) (CA INDEX NAME)



L92 ANSWER 16 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1997:161051 HCAPLUS  
 TI A fiber optic biosensor for the detection of cyclodiene insecticides.  
 AU Brummel, K. E.; Eldefrawi, M. E.; Wright, J.  
 CS School Pharmacy, UMAB, Baltimore, MD, 21201, USA  
 SO Book of Abstracts, 213th ACS National Meeting, San Francisco, April 13-17 (1997), ENVR-024 Publisher: American Chemical Society, Washington, D. C. CODEN: 64AOAA  
 DT Conference; Meeting Abstract  
 LA English  
 AB A fiber optic biosensor for detecting cyclodiene insecticides is described. We have generated three polyclonal antibodies (PABs) from synthesized **haptens** by introducing spacers with various chain lengths via hexachlorocyclopentadiene conjugates and Bovine Serum Albumin (BSA). Using competitive displacement of a fluorescent chlorendic/caproic acid conjugate (FL-CCA), detection limits of the cyclodiene insecticides Chlordane, Heptachlor, Dieldrin and Aldrin were 0.04 ng/mL, 4 ng/mL, 4 ng/mL and 370 ng/mL, resp. A value of 100 expresses detection of the **haptens** CCA. Cross-reactivity of the biosensor for Chlordane, Heptachlor, Dieldrin, Endrin, **Endosulfan** and Aldrin were 64, 60, 51, 20, 9 and 7, resp. A com. anti-heptachlor Ab gave different cross reactivities.

L92 ANSWER 17 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1995:693438 HCAPLUS  
 DN 123:79038  
 TI Use of carrier matrix in preparation of reagents for immunoassays and bioassays  
 IN Holzer, Susanne  
 PA Germany  
 SO Ger. Offen., 5 pp. CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4343261	A1	19950622	DE 1993-4343261	19931217
	DE 4343261	C2	19951102		
PRAI	DE 1993-4343261		19931217		

AB Luminescent-labeled **haptens** are prepd. for use in immunoassays by (a) coupling a luminescent label to a spacer in the presence of a solid matrix and conjugating the product with a **haptens**, or (b) coupling the **haptens** with a spacer in the presence of the matrix and conjugating the product with a luminescent label. A **haptens** can be similarly coupled to a carrier protein for use as an antigen to raise antibodies to the **haptens**. Thus, ABEI was coupled with .beta.-alanine in the presence of DCC on a silica gel TLC plate. The product was purified by chromatog. on the plate, eluted, coupled with .beta.-amanitin in the presence of DCC on a diphenyl-F reversed-phase plate, and purified by chromatog. on the plate.  
 IT 107-95-9, .beta.-Alanine  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(use of carrier matrix in prepn. of reagents for immunoassays and bioassays)

RN 107-95-9 HCAPLUS

CN .beta.-Alanine (6CI, 8CI, 9CI) (CA INDEX NAME)

H<sub>2</sub>N-CH<sub>2</sub>-CH<sub>2</sub>-CO<sub>2</sub>H

L92 ANSWER 18 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:592074 HCAPLUS

DN 123:27663

TI **Hapten** synthesis and development of ELISAs for detection of **endosulfan** in water and soil.

AU Lee, Nanju; Skerritt, John H.; McAdam, David P.

CS Division of Plant Industry, CSIRO, North Ryde, 2113, Australia

SO Journal of Agricultural and Food Chemistry (1995), 43(6), 1730-9

CODEN: JAFCAU; ISSN: 0021-8561

PB American Chemical Society

DT Journal

LA English

AB Two enzyme immunoassays, a lab. assay based on microwell plates and a field test based on the use of small polystyrene tubes, have been developed for the detection of **endosulfan** residues in water and soil. To raise antibodies that are sensitive and selective for the toxic forms of **endosulfan**, 3 **haptens** were prepd. One **hapten** was prepd. by derivatization of **endosulfan** diol [1,4,5,6,7,7-hexachloro-2,3-bis(hydroxymethyl)norborn-5-ene], while the others used derivs. of a rigid five-membered ring adjacent to the bridged hexachlorocyclopentadiene (cyclodiene) ring. Different **hapten** combinations were used for immunogen and reporter enzyme conjugate in both the microwell and field assays. The optimized assays have detection limits of about 0.2 ppb **endosulfan** and detect in the range 0.2-10 ppb (0.2-20 ppb for field assay, without sample diln.). Water samples can be analyzed directly without solvent extn. or concn., while soil samples are simply extd. with 90% methanol. The tests detect **endosulfan** sulfate with sensitivity similar to that for **endosulfan**, but are 4-10 times less sensitive to **endosulfan** diol, and therefore the assays can potentially det. toxic compds. of **endosulfan** (**endosulfan** and **endosulfan** sulfate) from the total **endosulfan** residues present in the environment.

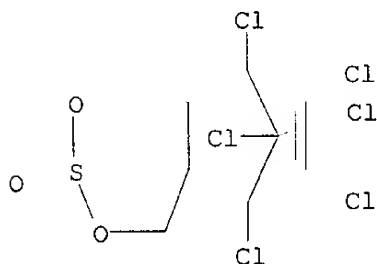
IT 115-29-7, **Endosulfan**

RL: ANT (Analyte); ANST (Analytical study)

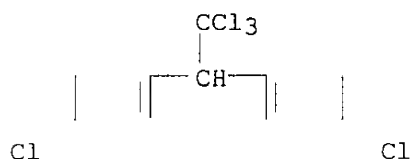
(ELISAs for detection of **endosulfan** in water and soil)

RN 115-29-7 HCAPLUS

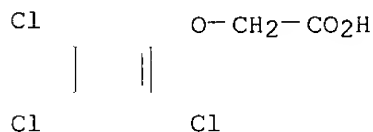
CN 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide (9CI) (CA INDEX NAME)



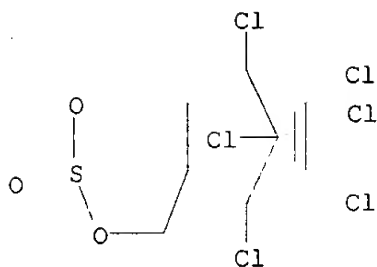
L92 ANSWER 19 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1995:559182 HCAPLUS  
 DN 123:135654  
 TI Antidioxin monoclonal antibodies. Molecular modeling of cross-reactive congeners and the antibody combining site  
 AU Stanker, Larry H.; Recinos, Adrian, III; Linthicum, D. Scott  
 CS U.S. Dep. Agric., Agric. Res. Service, College Station, TX, 77845, USA  
 SO ACS Symposium Series (1995), 586(Immunoanalysis of Agrochemicals), 72-88  
 CODEN: ACSMC8; ISSN: 0097-6156  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB A series of modeling expts. were undertaken to help clarify the factors controlling binding of a set of monoclonal antibodies that bind polychlorinated dibenzo-p-dioxins. Min. energy conformations were generated for a no. of polychlorinated dibenzo-p-dioxins, furans and PCBs congeners. These models suggest that antibody binding is a complex process but that the size, position of chlorines and planarity of the mols. are crit. for antibody binding. Similar expts. with the **haptens** used to generate these monoclonal antibodies suggest that both structural and electronic alterations introduced in order to facilitate conjugation to carrier protein are recognized by the antibodies. The amino acid sequence for these antibodies also is presented as well as models of the antibody combining site.  
 IT 50-29-3, DDT, biological studies 93-76-5, 2,4,5-Trichlorophenoxyacetic acid 115-29-7, Endosulfan  
 RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)  
 (antidioxin monoclonal antibodies. Mol. modeling of cross-reactive congeners and antibody combining site)  
 RN 50-29-3 HCAPLUS  
 CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)]



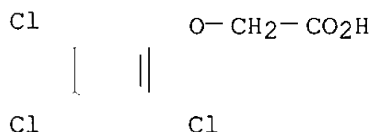
RN 93-76-5 HCAPLUS  
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)



RN 115-29-7 HCAPLUS  
 CN 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide (9CI) (CA INDEX NAME)



L92 ANSWER 20 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1995:303799 HCAPLUS  
 DN 122:74475  
 TI Solid-phase enzyme immunoassays of the herbicides 2,4-dichlorophenoxyacetic and 2,4,5-trichlorophenoxyacetic acids  
 AU Dzantiev, B. B.; Zherdev, A. V.; Moreva, I. Yu.; Romanenko, O. G.; Sapegova, L. A.; Eremin, S. A.  
 CS Bach Institute of Biochemistry, Moscow State University, Moscow, Russia  
 SO Prikladnaya Biokhimiya i Mikrobiologiya (1994), 30(6), 931-9  
 CODEN: PBMIK; ISSN: 0555-1099  
 PB MAIK Nauka  
 DT Journal  
 LA Russian  
 AB Competitive solid-phase enzyme immunoassays for the detection of 2,4-D and 2,4,5-T have been developed and optimized. The sensitivity of the assay is 3 ng/mL for 2,4-D and 5 ng/mL for 2,4,5-T. The time of the assay is 1.5 h. The sensitivity of the assays increases after immobilization of antibodies on Staphylococcus protein A, in the case of using monovalent derivs. of antibodies, and as a result of chem. modification of **haptens**. The detection limit for the pesticides is 0.1 ng/mL in this case, which is close to the sensitivity of the assay for the **haptens** conjugated with proteins.  
 IT 93-76-5, 2,4,5-T  
 RL: ANT (Analyte); ANST (Analytical study)  
 (solid-phase enzyme immunoassays of chlorophenoxyacetate herbicides)  
 RN 93-76-5 HCAPLUS  
 CN Acetic acid, (2,4,5-trichlorophenoxy)- (8CI, 9CI) (CA INDEX NAME)

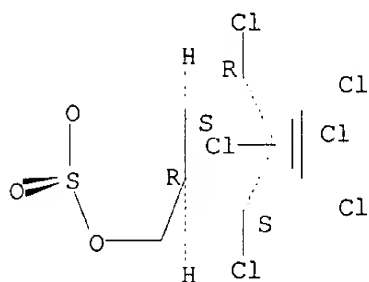


L92 ANSWER 21 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1994:629445 HCAPLUS  
 DN 121:229445  
 TI Monoclonal antibodies to cyclodiene insecticides.  
 IN Stanker, Larry H.; Vanderlaan, Martin; Watkins, Bruce E.  
 PA Reagents of the University of California, USA  
 SO U.S., 15 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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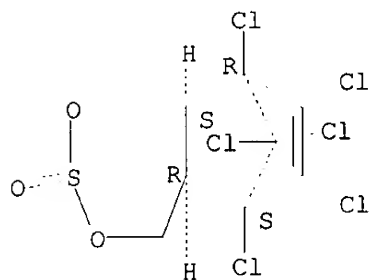
PI US 5334528 A 19940802 US 1989-428537 19891030  
 PRAI US 1989-428537 19891030  
 AB Methods are described for making specific monoclonal antibodies useful for detection of cyclodienes in foods and environmental samples. Extn. and prepn. of org. samples for immunoassay in a polar-nonpolar reaction medium permits detection of halogenated org. ring structures. The monoclonal antibody is produced by hybridoma Hept-2 (ATCC No. HB 10623), a fusion product of an immortal myeloma mammalian cell and a spleen cell from a mammal immunized with 1-hydroxychlorodene hemisuccinate **hapten** reacted with an immunogenic keyhole limpet hemocyanin carrier protein. The antibody is identified by screening for its binding affinity with the analog **hapten** of heptachlor-bovine serum albumin and related cyclodiene compds. and lack of binding affinity to carrier protein alone.  
 IT 959-98-8, .alpha.-Endosulfan 33213-65-9,  
 .beta.-Endosulfan  
 RL: ANT (Analyte); ANST (Analytical study)  
 (monoclonal antibodies to cyclodiene insecticides)  
 RN 959-98-8 HCAPLUS  
 CN 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3.alpha.,5a.beta.,6.alpha.,9.alpha.,9a.beta.)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 33213-65-9 HCAPLUS  
 CN 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3.alpha.,5a.alpha.,6.beta.,9.beta.,9a.alpha.)- (9CI) (CA INDEX NAME)

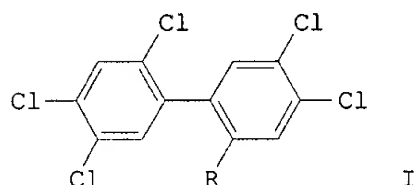
Relative stereochemistry.



L92 ANSWER 22 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1994:579206 HCAPLUS  
 DN 121:179206  
 TI Glutaramyl-.beta.-alanyl Spacer Group for **Haptenic** Coupling to Proteins. Preparation of Immunogens for Antibody Production against Polychlorinated Biphenyls  
 AU Goon, David J. W.; Nagasawa, Herbert T.; Keyler, Daniel E.; Ross,



Catherine A.; Pentel, Paul R.  
 CS Departments of Medicinal Chemistry and of Medicine, University of  
 Minnesota, Minneapolis, MN, 55455, USA  
 SO Bioconjugate Chemistry (1994), 5(5), 418-22  
 CODEN: BCCHEs; ISSN: 1043-1802  
 DT Journal  
 LA English  
 GI



AB By use of a glutaramyl-.beta.-alanyl spacer group, a **hapten** for the polychlorinated biphenyl I (R = Cl), viz. I [R = NHCO(CH<sub>2</sub>)<sub>3</sub>CONHCH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H], was successfully conjugated to carrier proteins to provide immunogens with high **hapten**/protein molar substitution ratios (MSR's). The procedure allows for the incorporation of .beta.-[<sup>3</sup>H]-alanine into the immunogen, thereby providing an accurate radiochem. method for the quant. assessment of MSR. The use of the glutaramyl spacer group was prompted by the observation that the corresponding succinamyl group was subject to side reactions manifested by succinimide formation during the carboxyl activation step to an activated ester for subsequent coupling to proteins, thus severely compromising the coupling yields. The glutaramyl-.beta.-alanyl spacer group should be generally applicable for protein conjugation of any **hapten** with an amino functional group in the mol.

IT 107-95-9, .beta.-Alanine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (amidation of, with arylglutaramic acid active esters)

RN 107-95-9 HCAPLUS  
 CN .beta.-Alanine (6CI, 8CI, 9CI) (CA INDEX NAME)

H<sub>2</sub>N-CH<sub>2</sub>-CH<sub>2</sub>-CO<sub>2</sub>H

L92 ANSWER 23 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1994:475438 HCAPLUS  
 DN 121:75438  
 TI A classification model for allergic contact dermatitis  
 AU Magee, Philip S.; Hostynek, Jurij J.; Maibach, Howard I.  
 CS BIOSAR Res. Project, Vallejo, CA, 94591, USA  
 SO Quantitative Structure-Activity Relationships (1994), 13(1), 22-33  
 CODEN: QSARDI; ISSN: 0931-8771  
 DT Journal  
 LA English  
 AB A classification model based on 36 compds. inducing allergic contact dermatitis and 36 non-allergens was developed by the discriminant technique of 2-value multiple regression anal. One outlier was obsd. and several of the compds. fell in the indeterminate region between the classes. Based on variable results of clin. data (human and animal), some overlap in the model was considered more reasonable than perfect sepn. The descriptors in this method clearly imply intercellular transport (LogP derived) and various forms of binding (London forces [MR] and

hydrogen-bonding [HBA, HBD]) as part of the allergic contact dermatitis (ACD) response mechanism. In addn., substructure descriptors related to the epidermal reactivity of the ACD inducers were statistically important. These include directly reactive functional groups from **haptens** and metabolizable precursor groups of prohaptens. The model was developed from carefully selected compds. of diverse structure, representing a broad range of **haptens** and prohaptens substructures without undue mol. complexity. Validation of the model is in progress on a broad range of mol. structures far beyond those used in construction.

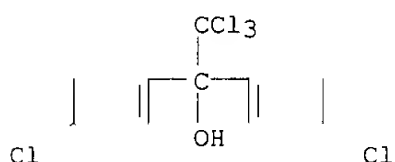
IT 115-32-2, Kelthane

RL: ANST (Analytical study)

(allergic contact dermatitis from, model for)

RN 115-32-2 HCAPLUS

CN Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)- (9CI) (CA INDEX NAME)



L92 ANSWER 24 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1990:196534 HCAPLUS

DN 112:196534

TI Preparation and characterization of polyclonal and monoclonal antibodies against the insecticide **DDT**

AU Buergisser, Daniel; Frey, Stefan; Gutte, Bernd; Klauser, Stephan

CS Biochem. Inst., Univ. Zurich, Zurich, CH-8057, Switz.

SO Biochemical and Biophysical Research Communications (1990), 166(3), 1228-36

CODEN: BBRCA9; ISSN: 0006-291X

DT Journal

LA English

AB A synthetic **DDT** deriv. in which the mol. structure of **DDT** was completely retained was coupled to bovine serum albumin. Animals were immunized with the **DDT**-bovine serum albumin conjugate and polyclonal and monoclonal antibodies against the insecticide were isolated. These antibodies seemed to be the first true anti-**DDT** antibodies and distinguished much better between **DDT** and **DDT** metabolites than previously prepd. anti-**DDT** antisera. In competitive solid phase RIAs, **DDT** concns. as low as 10 nM or 0.0035 mg/L were detectable. The anti-**DDT** antibodies can be used for environmental analyses and lend themselves to the elucidation of the structure of the **DDT** binding site.

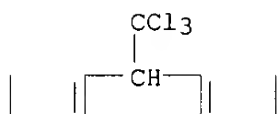
IT 50-29-3D, **DDT**, metabolite

RL: PROC (Process)

(**DDT**-specific antibody discrimination of)

RN 50-29-3 HCAPLUS

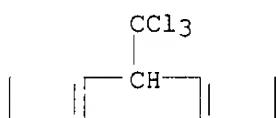
CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



Cl

Cl

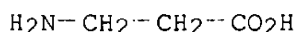
IT 50-29-3, DDT, biological studies  
 RL: BIOL (Biological study)  
 (as **hapt**en, in DDT-specific antibody prepn.)  
 RN 50-29-3 HCAPLUS  
 CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



Cl

Cl

L92 ANSWER 25 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1989:455320 HCAPLUS  
 DN 111:55320  
 TI A simple method for increasing **hapt**en immunogenicity by a specific structural modification of the carrier  
 AU Marini, Stefano; Bannister, Joe; Giardina, Bruno  
 CS Biotechnol. Cent., Cranfield Inst. Technol., Cranfield/Bedfordshire, MK43 0AL, UK  
 SO Journal of Immunological Methods (1989), 120(1), 57-63  
 CODEN: JIMMBG; ISSN: 0022-1759  
 DT Journal  
 LA English  
 AB A simple procedure to bind **hapt**ens, drugs, or peptides selective through their amino or carboxylic group to a spacer arm modified non-immunogenic polypeptide is described. Gelatin, a well known non-immunogenic carrier, was modified by blocking its amino groups. Spacer arms with primary amino groups such as .beta.-alanine or ethylenediamine were conjugated to this protein by carbodiimide resulting in spacer modified gelatin. These modified polypeptides were tested for their ability to selectively bind **hapt**ens through their amino or carboxylic groups. Three probes were used and the results obtained confirm the hypothesis. Three conjugates obtained were further used to induce an immune response in mice. Enhancement of the immunogenicity of these spacer-arm supported **hapt**ens was obsd. This study provides a rational approach to the prodn. of well defined antigens using a simple conjugation technique.  
 IT 107-95-9, .beta.-Alanine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with acetylated gelatin, in **hapt**en-carrier prepn.)  
 RN 107-95-9 HCAPLUS  
 CN .beta.-Alanine (6CI, 8CI, 9CI) (CA INDEX NAME)



L92 ANSWER 26 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
AN 1988:419900 HCAPLUS  
DN 109:19900  
TI Immunoassay for sparingly soluble **hapten** in aqueous samples  
using **hapten**-protein conjugates as standard  
IN McMahon, Philip L.; Faust, Susan  
PA Agritech Systems, Inc., USA  
SO Eur. Pat. Appl., 3 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

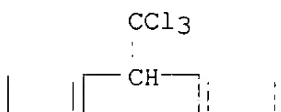
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 256551	A2	19880224	EP 1987-111953	19870818
	EP 256551	A3	19900314		
	R: DE, FR, GB, IT, NL				
	US 5166078	A	19921124	US 1986-897984	19860819
PRAI	US 1986-897984		19860819		

AB In an immunoassay for detn. of a poorly water-sol. **hapten**, a water-sol. conjugate of the **hapten** with a water-sol. macromol. (mol. wt. >1000) is used as a std. The std. is stable in aq. soln. and therefore need not be stored in an org. solvent or in lyophilized form. Aflatoxin B1 was refluxed with carboxymethylamine-HCl in pyridine-MeOH-H2O (1:4:1), and the oxime product was conjugated with bovine serum albumin in the presence of 1-ethyl-3,3-dimethylaminopropylcarbodiimide. The conjugate was used to raise antibodies to aflatoxin B1 in rabbits, and was used as a std. in an immunoassay for aflatoxin B1.

IT 50-29-3, DDT, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(detn. of, immunochem., water-sol. **hapten**-macromol. conjugate as std. in)

RN 50-29-3 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



Cl

Cl

L92 ANSWER 27 OF 31 HCAPLUS COPYRIGHT 2003 ACS  
AN 1981:207026 HCAPLUS  
DN 94:207026  
TI Gas-liquid chromatographic demonstration of the specificity of rabbit IgG antibody to the pesticide **DDT** and its metabolites  
AU Furuya, Koji; Urasawa, Shozo  
CS Dep. Hyg., Sapporo Med. Coll., Sapporo, Japan  
SO Molecular Immunology (1981), 18(2), 95-102  
CODEN: MOIMD5; ISSN: 0161-5890  
DT Journal  
LA English  
AB The assocn. consts. of rabbit anti-**DDT** IgG antibody for **DDT** and its metabolites DDD, DDE, and 1,1-bis(p-chlorophenyl)-2,2,2-trichloroethanol (which are **haptens**) were 1.06 and 1.61 .times. 108 L/mol and 1.09 and 0.75 .times. 107 L/mol, resp. Differences in **DDT**-replacing ability among **DDT** and its

structurally-related **haptens** were related to the van der Waals contours and perhaps hydrophobicities of these **haptens**. The DDT-displacing power of each metabolite was dependent on the stronger of the two different assocn. consts. of the antibody for the **hapten**. Thus, rabbit IgG anti-DDT antibody discriminates minor differences in structure among DDT and its structurally related **haptens**. The gas chromatog. method used ( $^{63}\text{Ni}$  electron-capture detection) appears suitable for detn. of water-insol. **haptens** for which radioisotope-labeling is difficult.

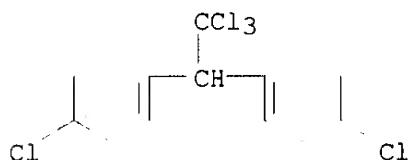
IT 50-29-3D, metabolites 115-32-2

RL: BIOL (Biological study)

(antibody to DDT binding specificity to, structure in relation to)

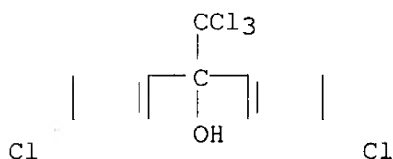
RN 50-29-3 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



RN 115-32-2 HCAPLUS

CN Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)- (9CI) (CA INDEX NAME)



L92 ANSWER 28 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1981:203535 HCAPLUS

DN 94:203535

TI Effect of DDT on soluble proteins of skeletal muscles

AU Markhvaidze, R. I.

CS Ya. Gogebashvile Pedagog. Inst., Telavi, USSR

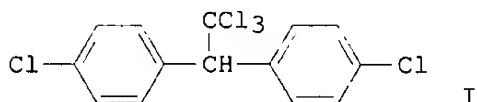
SO Izvestiya Akademii Nauk Gruzinskoi SSR, Seriya Biologicheskaya (1980), 6(6), 520-5

CODEN: IGSBDO; ISSN: 0321-1665

DT Journal

LA Russian

GI



AB Electrophoresis and immunoelectrophoresis of sol. proteins of skeletal

muscles of rats receiving small quantity of DDT (I) [50-29-3] chronically showed anomalous antigens-I haptens or its derivs. The electrophoretic changes are described.

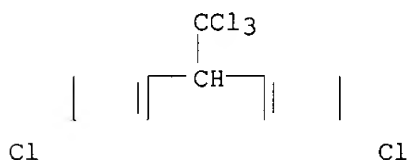
IT 50-29-3, biological studies

RL: BIOL (Biological study)

(sol. proteins of muscle response to, electrophoretic study of)

RN 50-29-3 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)



L92 ANSWER 29 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1980:53053 HCAPLUS

DN 92:53053

TI Properties of an antibody to Kelevan isolated by affinity chromatography: antibody reactivation of ATPase activities inhibited by pesticides

AU Koch, R. B.; Patil, T. N.; Glick, Bruce; Stinson, Robert S.; Lewis, E. A.

CS Dep. Biochem., Mississippi State Univ., Mississippi State, MS, 39762, USA

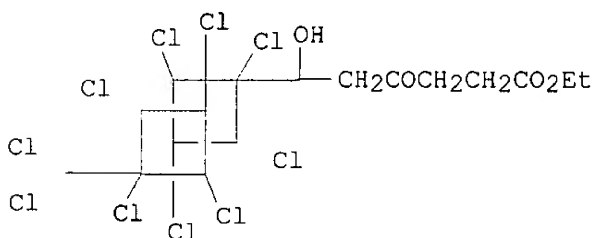
SO Pesticide Biochemistry and Physiology (1979), 12(2), 130-40

CODEN: PCBPBS; ISSN: 0048-3575

DT Journal

LA English

GI



I

AB Antibody mols. were produced by injection of bovine serum albumin-Kelevan (I) [4234-79-1] into chickens and rabbits. Pure antibody was obtained by a single pass of blood serum through an affinity column. The affinity gel was prepd. by covalently binding bovine .gamma.-globulin-I to activated Sepharose 4B-CN. Purity of the antibody was detd. by ultracentrifugation and gel electrophoresis. Properties of the antibody included: sedimentation coeff. = 6.2, isoelec. point = 7.0, calcd. mol. wt. = 150,000, and precipitin band formation using the microoouchterlony test. The antibodies in free or immobilized form were able to prevent or reverse Kepone [143-50-0] inhibition of ATPase (EC 3.6.1.3) [9000-83-3] activity from a variety of tissues from different sources. About 70 .mu.g (.apprx.0.4 .mu.M) of purified antibody was sufficient to restore the activity of mitochondrial (oligomycin-sensitive) Mg<sup>2+</sup> ATPase activity which had been inhibited by 1 .mu.M Kepone. The antibody was effective in preventing enzyme inhibition by other organochlorine pesticides with

widely differing mol. structures. However, nonchlorinated inhibitors of mitochondrial oligomycin-sensitive  $Mg^{2+}$  ATPase activity were much less affected by the antibody. The available evidence suggests that the antibody binding site for the **hapten** may be specific for secondary or induced bonding forces due to the C-Cl bonds rather than for a specific mol. structure.

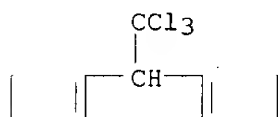
IT 50-29-3, biological studies 115-32-2

RL: BIOL (Biological study)

(antibodies to, ATPase inhibition in relation to)

RN 50-29-3 HCAPLUS

CN Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro- (9CI) (CA INDEX NAME)

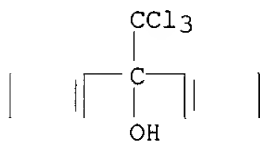


Cl

Cl

RN 115-32-2 HCAPLUS

CN Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)- (9CI) (CA INDEX NAME)



Cl

Cl

L92 ANSWER 30 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1975:402009 HCAPLUS

DN 83:2009

TI Radioimmunoassay for dieldrin and aldrin

AU Langone, John J.; Van Vunakis, Helen

CS Dep. Biochem., Brandeis Univ., Waltham, MA, USA

SO Research Communications in Chemical Pathology and Pharmacology (1975), 10(1), 163-71

CODEN: RCOCB8; ISSN: 0034-5164

DT Journal

LA English

GI For diagram(s), see printed CA Issue.

AB The radioimmunoassay for dieldrin (I) [60-57-1] and aldrin (II) [309-00-2] was carried out using 6,7-dihydro-6-carboxyaldren [5432-00-8]

**hapten**, covalently bound to human serum albumin. The  $^{125}I$ -labeled

**hapten**-tyramine conjugate (III) [55032-11-6] was used to prep.

labeled antigen. The rabbit was used for antibody prodn. (Van Vunakis, H., et al. 1974). The specificity of the antibodies, detd. with respect to several other organochlorine insecticides, indicated that much of the binding energy was directed towards the hexachlorobicyclic ring system.

DDT, decachlorobiphenyl, 2,4,5-T and other insecticides did not interfere with the radioimmunoassay. Picomole levels of I and II were detected by the method.

L92 ANSWER 31 OF 31 HCAPLUS COPYRIGHT 2003 ACS

AN 1975:119806 HCAPLUS

DN 82:119806

TI Conjugation of DDT with proteins  
 AU Markhvaidze, R. I.; Baldaeva, Z. F.; Speranskii, V. V.  
 CS USSR  
 SO Mater. Nauchn. Konf., Vost.-Sib. Tekhnol. Inst., Sekts. Khim.-Tekhnol.,  
 11th (1973), Meeting Date 1972, 84-7. Editor(s): Frolov, D. Sh.  
 Publisher: Buryat. Kn. Izd., Ulan-Ude, USSR.  
 CODEN: 29MJAC  
 DT Conference  
 LA Russian  
 GI For diagram(s), see printed CA Issue.  
 AB A conjugate of DDT (I) [50-29-3] and proteins was  
 obtained and used for prodn. of immune sera. I was nitrated, aminated,  
 treated with  $\text{NaNO}_2$ , and then added to a normal equine serum at pH 8-9.

=> d his

(FILE 'HCAPLUS' ENTERED AT 07:29:12 ON 16 JAN 2003)  
 DEL HIS

FILE 'REGISTRY' ENTERED AT 07:32:01 ON 16 JAN 2003

L1 1 S ENDOSULPHAN/CN  
 L2 6 S 124791-18-0 OR 123585-01-3 OR 107445-44-3 OR 65148-73-4 OR 43  
 L3 1 S 50-29-3  
 L4 1 S 26264-54-0  
 L5 10 S C6H8CL6  
 L6 3 S L5 NOT HEXANE  
 L7 7 S L5 NOT L6  
 L8 7 S L4,L7  
 L9 1 S 107-95-9  
 L10 1 S 93-76-5  
 L11 1 S 101495-68-5  
 L12 4 S 12002-48-1 OR 120-82-1 OR 108-70-3 OR 87-61-6

FILE 'HCAPLUS' ENTERED AT 07:37:46 ON 16 JAN 2003

L13 4479 S L1  
 L14 4674 S ENDOSULPHAN OR ENDOSULFAN  
 L15 857 S THIODAN OR THIONEX OR THIOTOX OR TIONEX OR TIOVEL OR THIMUL O  
 L16 76 S MALIX OR MADHUSULPHAN OR MADHUSULFAN OR HOE2671 OR HOE 2671 O  
 L17 6101 S L13-L16  
 L18 40 S L8  
 E HEXACHLOROHEXANE OR HEXACHLORO HEXANE OR HEXA CHLOROHEXANE OR  
 L19 102 S HEXACHLOROHEXANE OR HEXACHLORO HEXANE OR HEXA CHLOROHEXANE OR  
 L20 2 S CCL3 CH2 4CCL3  
 L21 1 S CHCL2CHCLCH2CCL3  
 L22 107 S L18-L21

FILE 'REGISTRY' ENTERED AT 07:47:20 ON 16 JAN 2003

L23 2 S 959-98-8 OR 33213-65-9  
 L24 11 S C9H6CL6O3S/MF  
 L25 11 S L24 AND 1337/RID  
 L26 5 S L25 NOT (14C2 OR D/ELS OR T/ELS)  
 L27 5 S L23,L26  
 L28 6 S L25 NOT L1,L27

FILE 'HCAPLUS' ENTERED AT 07:49:43 ON 16 JAN 2003

L29 5628 S L27  
 L30 6257 S L29 OR L17  
 L31 3 S L22 AND L30  
 L32 18381 S L2 OR L3  
 L33 23470 S DDT  
 L34 1070 S DICOFOL  
 L35 666 S KELTHANE



L36 217 S BENZHYDROL(L)4 4 DICHLORO (L) ALPHA (L) TRICHLOROMETHYL  
 L37 27361 S L32-L36  
 L38 2152 S L30 AND L37  
 L39 34 S L37 AND L22  
 E HAPTEN/CT  
 E E4+ALL  
 L40 430 S E2  
 L41 9 S E5  
 L42 3992 S E8+NT  
 L43 430 S E12  
 E E11+ALL  
 E HAPTEN  
 L44 11523 S E3-E31  
 L45 6 S L30 AND L44  
 L46 21 S L37 AND L44  
 L47 0 S L22 AND L44  
 L48 2 S L11  
 L49 3 S L9 AND L10  
 L50 4836 S L12  
 L51 1 S L50 AND L44  
 L52 1 S L49 NOT (61 OR 34)/SC  
 L53 1 S L31 AND 5/SC, SX  
 L54 29 S L51-L53, L45, L46, L48  
 E GOWDA P/AU  
 L55 16 S E3-E11  
 L56 2 S E11  
 E AMITARANI B/AU  
 L57 1 S E4  
 L58 1 S E2  
 E AMITA/AU  
 E RANI/AU  
 L59 3 S E14  
 L60 4 S E26  
 E PASHA A/AU  
 L61 8 S E3, E5  
 SEL DN AN 1 3 4  
 L62 3 S E1-E7  
 SEL AN DN L60 1  
 L63 1 S E8-E10  
 SEL DN AN L56 1  
 L64 1 S E11  
 SEL DN AN L55 1  
 L65 1 S E12  
 E KARANTH N/AU  
 L66 162 S E4-E11  
 E RAO J/AU  
 E RAO R/AU  
 L67 84 S E3  
 L68 68 S E78  
 E RAO RAJ/AU  
 L69 1 S E7  
 L70 4 S L58, L57, L63, L62, L64, L65  
 L71 4 S L70 AND L55-L70  
 L72 4 S L71 AND L13-L22, L29-L71  
 L73 2 S L54 NOT L40-L44  
 L74 1 S L73 NOT RAKITIN ?/AU  
 L75 1 S L73 NOT L74  
 L76 28 S L54 NOT L75  
 L77 27 S L76 AND L40-L44  
 L78 26 S L77 NOT POMATIA/TI  
 L79 29 S L72, L78  
 L80 1 S L48, L49 AND L50  
 L81 79 S L50 AND L9, L10

SEL DN AN 9  
L82 1 S L81 AND E1-E3  
L83 29 S L79,L82  
L84 29 S L40-L44 AND L9-L11  
L85 1 S L40-L44 AND L12  
L86 29 S L83,L85  
L87 4 S L84 AND L86  
L88 25 S L84 NOT L87  
SEL DN AN 2 4 7 8 11 12 20  
L89 7 S E4-E24  
L90 36 S L86,L87,L89 AND L13-L22,L29-L89  
L91 5 S L90 AND (RANI ? OR AMITA? OR PASHA ? OR KARANTH? OR RAO ? OR  
L92 31 S L90 NOT L91

FILE 'HCAPLUS' ENTERED AT 08:31:43 ON 16 JAN 2003

=> fil caba

FILE 'CABA' ENTERED AT 08:38:57 ON 16 JAN 2003

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FILE COVERS 1973 TO 10 Jan 2003 (20030110/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all tot

L109 ANSWER 1 OF 5 CABA COPYRIGHT 2003 CABI

AN 2002:209016 CABA

DN 20023160528

TI Comparison of ELISA and GC methods to detect DDT residues in water samples

AU **Amitarani, B. E.; Akmal Pasha; Putte Gowda;**  
Nagendraprasad, T. R.; **Karanth, N. G. K.; Pasha, A.;**  
**Gowda, P.**

CS Pesticide Residue Analysis and Abatement Laboratory, Department of Food  
Protectants & Infestation Control, Central Food Technological Research  
Institute, Mysore 570 013, India.

SO Indian Journal of Biotechnology, (2002) Vol. 1, No. 3, pp. 292-297. 11  
ref.

Publisher: National Institute of Science Communication. New Delhi  
ISSN: 0972-5849

CY India

DT Journal

LA English

AB ELISA and GC methods were used to analyse DDT residues in about 30 water samples collected from different areas of Mandya District of Karnataka. Polyclonal antibody based immunoassay developed at CFTRI, Mysore, performed well to detect the DDT residues. The minimum detectable level of DDT by ELISA was one part per billion (ppb) in the water samples tested. The insecticide residue ranged from 1 to 20 ppb. Experiments also revealed no matrix effect and hence did not require any prior clean-up. The pH of the water did not interfere in the assay. The ELISA method validated in the present work is specific to DDT. The results of ELISA with respect to DDT residues were found to be comparable to values obtained from the GC analysis of the water samples. The water samples could be directly used for ELISA test, thereby making the analysis quick, simple and cost effective.

CC HH430; PP200 Water Resources (General); PP600 Pollution and Degradation;  
ZZ900 Techniques and Methodology

GT India; Karnataka

BT South Asia; Asia; Developing Countries; Commonwealth of Nations; India

CT analytical methods; DDT; insecticide residues; pH; polluted water; water pollution

RN 50-29-3

L109 ANSWER 2 OF 5 CABA COPYRIGHT 2003 CABI

AN 1999:44722 CABA

DN 991001590

TI Developing immunoassays in a developing nation: challenges and success in India

AU Karanth, N. G. K.; Akmal Pasha; Rani, B. E. A.

; Asha, M. B.; Udayakumari, C. G.; Vijayashankar, Y. N.; Pasha, A.

; Kennedy, I. R. [EDITOR]; Skerrit, J. H. [EDITOR]; Highley, E. [EDITOR]

CS Food Protectants and Infestation Control Department, Central Food Technological Research Institute, Mysore 570 013, India.

SO ACIAR Proceedings Series, (1998) No. 85, pp. 263-269. 10 ref.

Meeting Info.: Seeking Agricultural Produce Free of Pesticide Residues, Proceedings of an International Workshop, 17-19 February 1998, Yogyakarta, Indonesia..

ISSN: 0816-4266

DT Conference Article; Journal

LA English

AB This paper gives an overview of the project to study food matrix interference, develop clean-up procedures for different foods and to develop antibodies for pesticides of importance in India. Immunoassays for endosulfan, DDT, DDE, parathion and carbendazim were carried out in India, and antibodies for pesticides have been developed in Indian laboratories.

CC HH400 Control by Chemicals and Drugs; ZZ900 Techniques and Methodology

GT India

BT Arachis; Papilionoideae; Fabaceae; Fabales; dicotyledons; angiosperms; Spermatophyta; plants; South Asia; Asia; Commonwealth of Nations; Developing Countries

CT immunoassay; antibodies; assays; DDE; DDT; ELISA; endosulfan; foods; fruits; funding; fungicide residues; groundnuts; HCH; HPLC; organochlorine pesticides; organophosphorus compounds; parathion; pesticides; pesticide residues; pyrethroids; food; detection; monitoring; plant pathology

RN 72-55-9; 50-29-3; 115-29-7; 608-73-1; 56-38-2

ORGN Arachis hypogaea

L109 ANSWER 3 OF 5 CABA COPYRIGHT 2003 CABI

AN 97:37757 CABA

DN 971102318

TI Thin-layer chromatographic detection of phosphorothionate and phosphorothiolothionate pesticides using 4-amino-N,N-diethylaniline

AU Pasha, A.; Vijayashankar, Y. N.; Karanth, N. G. K.

CS Central Food Technological Research Institute, Infestation Control and Protectants Department, Mysore 570 013, India.

SO Journal of AOAC International, (1996) Vol. 79, No. 4, pp. 1009-1011. 11 ref.

ISSN: 1060-3271

DT Journal

LA English

AB A thin-layer chromatographic method using a novel chromogenic reagent was developed to detect the phosphorothionate and phosphorothiolothionate groups of pesticides. On reaction with 4-amino-N,N-diethylaniline and subsequent exposure to bromine vapour, these compounds yield a deep magenta product. The chromogenic reagent is specific to these organophosphates and gives no response to phosphorothiolates and substituted phosphonates. The method is rapid and highly sensitive. The limit of detection is 0.05-0.5 micro g.

CC HH400 Control by Chemicals and Drugs; ZZ900 Techniques and Methodology

CT thin layer chromatography; techniques; detection; pesticides; organophosphorus pesticides; agricultural entomology

L109 ANSWER 4 OF 5 CABA COPYRIGHT 2003 CABI

AN 95:19724 CABA

DN 941108822  
 TI Metabolism and embryotoxicity of heptachlor in the albino rat (*Rattus norvegicus*)  
 AU Rani, B. E. A.; Krishnakumari, M. K.; Karanth, N. G. K.  
 CS Infestation Control & Protectants Area, Central Food Technological Research Institute, Mysore-570 013, India.  
 SO Journal of Environmental Biology, (1993) Vol. 14, No. 1, pp. 77-87. 13 ref.  
 ISSN: 0254-8704  
 DT Journal  
 LA English  
 AB Heptachlor fed to female rats at 120 mg/kg b.w. was metabolized in the body. The parent molecule and its 4 metabolites were detected in different tissues. GC and TLC analyses showed higher levels of toxic epoxide in the reproductive organs, and the concn increased during pregnancy. Conversely, concn of the less toxic hydroxy metabolites were low and decreased during pregnancy, indicating slow metabolic handling of heptachlor and heptachlor epoxide. This could lead to the build up of these 2 compounds, causing toxicity to the embryos by altered steroidogenesis, essential for term pregnancy.  
 CC LL900 Animal Toxicology, Poisoning and Pharmacology; HH400 Control by Chemicals and Drugs  
 BT cyclodiene insecticides; organochlorine insecticides; insecticides; pesticides; organochlorine pesticides; vertebrates; Chordata; animals; Muridae; rodents; mammals  
 CT toxicity; nontarget effects; heptachlor; effects; insecticides; pesticides; agricultural entomology  
 RN 76-44-8  
 ORGN mammals; rats

L109 ANSWER 5 OF 5 CABA COPYRIGHT 2003 CABI

AN 93:26672 CABA  
 DN 930513910  
 TI Accumulation and embryotoxicity of the insecticide heptachlor in the albino rat (*Rattus norvegicus*)  
 AU Rani, B. E. A.; Karanth, N. G. K.; Krishnakumari, M. K.  
 CS Infestation Control and Protectants Area, Central Food Technological Research Institute, Mysore 570 013, India.  
 SO Journal of Environmental Biology, (1992) Vol. 13, No. 2, pp. 95-100. 9 ref.  
 ISSN: 0254-8704  
 DT Journal  
 LA English  
 AB Kinetic studies in rats fed 12 mg/kg body wt of heptachlor revealed its accumulation in the ovaries, uterus and adrenal glands within 30 min. These levels then increased some 13-fold in the uterus and 2-fold in the adrenals during pregnancy.  
 CC LL900 Animal Toxicology, Poisoning and Pharmacology; TT300 Medical and Veterinary Entomology Records (Discontinued)  
 BT animals; organochlorine pesticides; pesticides; insecticides; cyclodiene insecticides; organochlorine insecticides; Muridae; rodents; mammals; vertebrates; Chordata  
 CT Laboratory animals; Organochlorine insecticides; Pesticides; Pregnancy; Uterus; Reproductive organs; Heptachlor; uptake; Toxicology; Nontarget effects; insecticides; effects; agricultural entomology  
 RN 76-44-8  
 ORGN rats

=> d his

(FILE 'HCAPLUS' ENTERED AT 07:29:12 ON 16 JAN 2003)

## DEL HIS

FILE 'REGISTRY' ENTERED AT 07:32:01 ON 16 JAN 2003

L1 1 S ENDOSULPHAN/CN  
L2 6 S 124791-18-0 OR 123585-01-3 OR 107445-44-3 OR 65148-73-4 OR 43  
L3 1 S 50-29-3  
L4 1 S 26264-54-0  
L5 10 S C6H8CL6  
L6 3 S L5 NOT HEXANE  
L7 7 S L5 NOT L6  
L8 7 S L4, L7  
L9 1 S 107-95-9  
L10 1 S 93-76-5  
L11 1 S 101495-68-5  
L12 4 S 12002-48-1 OR 120-82-1 OR 108-70-3 OR 87-61-6

FILE 'HCAPLUS' ENTERED AT 07:37:46 ON 16 JAN 2003

L13 4479 S L1  
L14 4674 S ENDOSULPHAN OR ENDOSULFAN  
L15 857 S THIODAN OR THIONEX OR THIOTOX OR TIONEX OR TIOVEL OR THIMUL O  
L16 76 S MALIX OR MADHUSULPHAN OR MADHUSULFAN OR HOE2671 OR HOE 2671 O  
L17 6101 S L13-L16  
L18 40 S L8  
E HEXACHLOROHEXANE OR HEXACHLORO HEXANE OR HEXA CHLOROHEXANE OR  
L19 102 S HEXACHLOROHEXANE OR HEXACHLORO HEXANE OR HEXA CHLOROHEXANE OR  
L20 2 S CCL3 CH2 4CCL3  
L21 1 S CHCL2CHCLCH2CCL3  
L22 107 S L18-L21

FILE 'REGISTRY' ENTERED AT 07:47:20 ON 16 JAN 2003

L23 2 S 959-98-8 OR 33213-65-9  
L24 11 S C9H6CL6O3S/MF  
L25 11 S L24 AND 1337/RID  
L26 5 S L25 NOT (14C2 OR D/ELS OR T/ELS)  
L27 5 S L23, L26  
L28 6 S L25 NOT L1, L27

FILE 'HCAPLUS' ENTERED AT 07:49:43 ON 16 JAN 2003

L29 5628 S L27  
L30 6257 S L29 OR L17  
L31 3 S L22 AND L30  
L32 18381 S L2 OR L3  
L33 23470 S DDT  
L34 1070 S DICOFOL  
L35 666 S KELTHANE  
L36 217 S BENZHYDROL(L)4 4 DICHLORO (L) ALPHA (L) TRICHLOROMETHYL  
L37 27361 S L32-L36  
L38 2152 S L30 AND L37  
L39 34 S L37 AND L22  
E HAPTEN/CT  
E E4+ALL  
L40 430 S E2  
L41 9 S E5  
L42 3992 S E8+NT  
L43 430 S E12  
E E11+ALL  
E HAPTEN  
L44 11523 S E3-E31  
L45 6 S L30 AND L44  
L46 21 S L37 AND L44  
L47 0 S L22 AND L44  
L48 2 S L11  
L49 3 S L9 AND L10

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L50      4836 S L12
L51      1 S L50 AND L44
L52      1 S L49 NOT (61 OR 34)/SC
L53      1 S L31 AND 5/SC,SX
L54      29 S L51-L53,L45,L46,L48
          E GOWDA P/AU
L55      16 S E3-E11
L56      2 S E11
          E AMITARANI B/AU
L57      1 S E4
L58      1 S E2
          E AMITA/AU
          E RANI/AU
L59      3 S E14
L60      4 S E26
          E PASHA A/AU
L61      8 S E3,E5
          SEL DN AN 1 3 4
L62      3 S E1-E7
          SEL AN DN L60 1
L63      1 S E8-E10
          SEL DN AN L56 1
L64      1 S E11
          SEL DN AN L55 1
L65      1 S E12
          E KARANTH N/AU
L66      162 S E4-E11
          E RAO J/AU
          E RAO R/AU
L67      84 S E3
L68      68 S E78
          E RAO RAJ/AU
L69      1 S E7
L70      4 S L58,L57,L63,L62,L64,L65
L71      4 S L70 AND L55-L70
L72      4 S L71 AND L13-L22,L29-L71
L73      2 S L54 NOT L40-L44
L74      1 S L73 NOT RAKITIN ?/AU
L75      1 S L73 NOT L74
L76      28 S L54 NOT L75
L77      27 S L76 AND L40-L44
L78      26 S L77 NOT POMATIA/TI
L79      29 S L72,L78
L80      1 S L48,L49 AND L50
L81      79 S L50 AND L9,L10
          SEL DN AN 9
L82      1 S L81 AND E1-E3
L83      29 S L79,L82
L84      29 S L40-L44 AND L9-L11
L85      1 S L40-L44 AND L12
L86      29 S L83,L85
L87      4 S L84 AND L86
L88      25 S L84 NOT L87
          SEL DN AN 2 4 7 8 11 12 20
L89      7 S E4-E24
L90      36 S L86,L87,L89 AND L13-L22,L29-L89
L91      5 S L90 AND (RANI ? OR AMITA? OR PASHA ? OR KARANTH? OR RAO ? OR
L92      31 S L90 NOT L91

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FILE 'HCAPLUS' ENTERED AT 08:31:43 ON 16 JAN 2003

FILE 'BIOTECHDS' ENTERED AT 08:32:46 ON 16 JAN 2003  
E GOWDA P/AU

L93 1 S E4  
E PASHA /AU

FILE 'BIOTECHNO' ENTERED AT 08:33:28 ON 16 JAN 2003  
E GOWDA/AU

L94 2 S E19,E20

FILE 'CABA' ENTERED AT 08:33:55 ON 16 JAN 2003

E GOWDA/AU  
L95 80 S E105-E112  
E PASHA/AU  
L96 6 S E4  
E PUTTE/AU  
L97 1 S E6  
E AKMAL/AU  
L98 4 S E12  
L99 80 S L95,L97  
L100 6 S L96,L98  
E AMITA/AU  
L101 1 S E71  
E RANI/AU  
L102 12 S E9,E10  
E BANGALORE/AU  
E EAHWAR/AU  
L103 13 S L101,L102  
L104 1 S L99 AND L100,L103  
L105 2 S L100 AND L103  
L106 2 S L104,L105  
E KARANTH/AU  
L107 48 S E9,E10  
L108 5 S L107 AND L99,L100,L103  
L109 5 S L106,L108

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